PHILADELPHIA, JULY 15, 1882.

ORIGINAL COMMUNICATIONS.

ON THE RATIONAL TREATMENT OF PULMONARY CONSUMPTION.

Read before the Philadelphia County Medical Society, March 22, 1882,

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MR. PRESIDENT AND GENTLEMEN,—At a former meeting* I had the honor of presenting for inspection by the members of this Society a case of pulmonary consumption which had greatly improved under treatment. When I first saw him, at the German Hospital, it was nearly nine months after the commencement of his sickness; he then exhibited the usual phenomena of pneumonic phthisis with commencing softening, constant cough, free expectoration, progressive anæmia and emaciation, and profound depression of the vital functions; but the most serious symptom was the frequently recurring hæmoptysis. Two months later he had gained twenty-four pounds in bodily weight, he was bright and cheerful, his strength had returned, the cough and expectoration were reduced, he slept well, and had no more hemorrhages. Indeed, so marked was the change that I felt warranted in demonstrating it to you. We then examined his lungs, and found a slight impairment of resonance only remaining at the right apex to indicate the site of former disease. His improvement was not only in his appearance, but was also evident in his physical condition; it was, in truth, so great that a few weeks later he was discharged at his own request, to return to his home in Europe. I have since been informed that during the sea-voyage he was accidentally exposed to cold and wet and subsequently perished from congestion of the lungs.

At the time of presenting this interesting case I stated that the manifest improvement here could not be attributed simply to one of those lulls so common in phthisical subjects, for it was too lasting; moreover, the physical signs showed changes too decided to admit of such explanation. Nor was it simply due to a change in his habits of life following admission into the wards of a well-conducted hospital, which is so often seen in patients from the lower walks of life; for he had been for several months under treatment and was steadily getting worse when I first saw him. Moreover, I had witnessed similar cases of improvement from systematic treatment, although perhaps not quite so striking. As the result therefore seemed so fairly attributable to the treatment, I exhibited it as such, and promised at some future time to bring the therapeutic method before you for discussion. The Board of Directors having honored me by an invitation to read a paper this evening, I embrace the opportunity of making a few remarks upon a general method of management that I regard as a rational treatment of pulmonary consumption,—a topic whose importance, I am sure, will relieve me of any need of apology for bringing it up again for your consideration. Each member of the Society has views based upon personal observation of this destructive disease; no one here is unfamiliar with its ravages; each has experimental knowledge acquired in its treatment, and has satisfied himself of the value of some remedies and the want of efficacy of others. If our discussion this evening will develop some new facts from this fund of experience, or enable us better to appreciate those already in our possession, my object in making these remarks will be accomplished. I bring the subject before you the more willingly because we have already had during the present winter two valuable papers presented upon allied topics,—one upon the diagnosis of the early stages of consumption, by Dr. J. T. Eskridge; the other upon its etiology and morbid anatomy, by Dr. James C. Wilson. As I concur in the general opinions expressed in those essays, it seemed to me that the series might be completed by a paper on the treatment of consumption. I can only express the hope that this necessarily brief and imperfect sketch of a most important topic may be thought worthy to complete it. The advantage resulting to me is that I am spared the necessity of discussing theories of consumption and the question of diagnosis, and may proceed directly to my subject of treatment. But before doing so I must premise a word of explanation.

* Proceedings, vol. ii. p. 5.

I have made use of the words "rational treatment." By this, however, I would not wish to use the term in its old acceptation as opposed to the teachings of experience; on the contrary, I employ the term in a modern and, I think, a higher sense. I believe that it is now generally admitted that the mode of treatment that can be demonstrated as curative in any disease may be considered as pre-eminently rational; and I might quote good authority for this use of the title. Just as the word "empirical" has of late years acquired a restricted and rather discreditable meaning, so the term "rational" has become more comprehensive. At the present time I would define a rational method of treatment as one intelligently combining a knowledge of pathology, upon the one hand, with that of the actions, both physiological and clinical, of remedies, upon the other. If you will accept this definition, I hope that the general outline herein presented may meet your views as to the requirements of a rational treatment of consumption.

Let me say at the outset that with the disease known as miliary tuberculosis—an acute infectious disorder—I have nothing to do at present. It appears to be a variety of septic poisoning, with accompanying febrile disturbance, due to the introduction of infecting material into the blood of an organism unable, from constitutional causes, to resist its influence. When it occurs in pulmonary consumption, as Niemeyer taught, it is an accidental complication, and does not belong of necessity to the clinical history of the disease.

In thus referring to the results of tubercular infection, in which the miliary deposits are not confined to the lungs, but are found in nearly all parts of the body, I would not confound it with the form of "galloping consumption," which Buhl terms acute desquamative or parenchymatous pneumonia. In this disease, miliary tubercles are not encountered, but *true* tubercular lesions are found in the mucous lining of the bronchioles, surrounded by inflammation, caseation, and more or less softening, which may lead to extensive destruction of the lung within a short time. Such a case came under my observation about ten years ago at the Pennsylvania Hospital, in a large man, who had been on a drinking-bout, in which he suffered considerable exposure. Shortly afterwards he developed pulmonary symptoms: a large cavity rapidly formed at the upper part of the left lung, but at the post-mortem examination no appearance of miliary lesions was found; both lungs were caseous. Let me say, finally, that from a standpoint of pathological anatomy, as well as of clinical experience, there are strong grounds for regarding the characteristic elementary lesions of the two forms of tubercle as distinct in their nature as they are in their situation, physical characters, and causes. I will also be obliged to omit consideration of syphilitic phthisis, or syphiloma of the lung, the treatment of which by iodides gives such brilliant results.

With the exception of the forms mentioned previously, pulmonary consumption is essentially a chronic disorder, and therefore affords ample scope for the exhibition of our therapeutical skill. Unfortunately, the materia medica has been searched in vain for a specific remedy; nor need we seek much further in this direction. Regarding phthisis pulmonalis essentially as a constitutional weakness having a local expression, it would seem that in order to cope successfully with the disease we must, to a certain extent, regenerate the individual, place him under conditions favorable for health, and require of our pharmaceutical remedies only a certain amount of aid in removing obstacles to recovery, and in the improvement of nutrition. It appears to me, therefore, that the principal factors in the therapeutic problem presented by a case of pulmonary consumption might be broadly stated as follows: 1, to relieve urgent symptoms; 2, remedy bad hygiene; and, 3, remove the dyscrasia.

I will discuss these indications for treatment in the order in which they stand, first taking up the relief of a few prominent symptoms, of which, as my time is limited, I can only at present offer the briefest suggestions, and such as appear to be sustained by experience.

1. Relief of Urgent Symptoms.

LUNGS AND AIR-PASSAGES.

Cough.—It is always a nice question to decide how much we may interfere with the cough. It is understood that, if we could remove the morbid condition upon which the cough depends, we get rid of the cough without trouble. In addition to the increased secretion in the larger tubes

there is an increased reflex excitability of the mucous membrane, and this hyperæsthesia of the pneumogastric filaments appears to be a part of a general neuropathic condition, to be discussed farther on. In many cases of consumption there is also more or less bronchial or laryngeal ulceration. It is impossible, therefore, to quickly remove the cause of the cough. Shall it be palliated? If paroxysmal and exhausting, it must be palliated; but if loose and not very annoying, it seems to me that it should not be much interfered with. In fact, free expectoration during the day should rather be encouraged, so that we may be at liberty to administer at night an efficient hypnotic that will hold the cough in check and allow several hours' uninterrupted sleep. As to the remedies to be used, I think the best combination, where the expectoration is scanty and the cough spasmodic, is the morphia and ipecacuanha lozenge (containing only the fortieth of a grain of morphia), using three or four in the course of the day. Troches of codeia are useful in paroxysmal coughing.* Where the cough is loose and bronchorrhœa exists, fluid extract of ergot in decided doses sometimes acts well, both directly upon the vessels of the mucous membrane, and indirectly upon the heart and circulation. The steam atomizer may also be used once daily, with lime-water and belladonna (gr. j to ʒiv), or, if the secretions are fetid, with solutions of carbolic or salicylic acid, thymol, or benzoate of sodium; and where the catarrhal condition is marked, a medicated water of volatile oil of eucalyptus I have used with very satisfactory results. The last-named agent may also be used in the hot-water inhaling apparatus, or compound tincture of benzoin, turpentine, or iodine substituted. Of the aërial inhalers (used through a *respirateur* or on a handkerchief), the principal one is emphatically chloroform; but it should be controlled by the physician himself. This has yielded so much relief that a few years ago it was lauded as curative, and even now is believed to be the basis of a popular and profitable ozone cure for consumption. A mixture of ether and eau-de-Cologne (one part to four) may be given to patients to inhale in the intervals, if the cough is spasmodic and severe. Iodine and carbolic acid (one to three), dropped on some absorbent cotton already impregnated with the oil of nutmeg, is sometimes efficient, the vapor being inhaled once or twice daily, for ten or fifteen minutes at a time. I have not the time, however, to extend further this list of agents, whose method of administration possesses the great advantage of medicating the air-passages directly, without disordering the stomach or passing through the general circulation, and whose virtues are not to be limited or measured by their merely antiseptic qualities.

As regards cough mixtures *per se*, their name is legion. I would say at the outset that it has seemed very evident to me, from my own experience, that unless you have given up all hope for the patient, and can only look for euthanasia, opiates should be given with the greatest care, and only in minimum doses. The conviction that opium freely given hastens death in consumption, from observation of its current abuse in hospitals particularly, has been impressed upon my mind too deeply to be easily shaken. I would therefore prefer other agents where a cough remedy is required, such, possibly, as atropia, hyoscyamus, or hydrocyanic acid combinations, chloral, with bromide of ammonium, sodium, or potassium, according to circumstances. Where there is a constant hacking cough, the bromide of potassium acts magically, but is too depressing for constant use. Where it is safe to use opium, a combination, introduced by Prof. Da Costa, of deodorized tincture of opium (gtt. iij–v), dilute sulphuric acid (♏ij–iij), and syrup of wild cherry (ʒi–ij), is pleasant and very efficient. The infusion of prunus Virginiana, properly made, is a good antispasmodic and, at the same time, tonic, and was formerly used in consumption much more than it is at present. The lycopus Virginica (bugle-weed) infusion (fʒs to Oj) enjoyed a high reputation at a former period in the treatment of consumption, a wineglassful being taken three or four times a day. It contains a volatile oil, bitter principle, and tannin, and is tonic, sedative, and astringent. The fluid extract may now be obtained, and may be used in dose of from eight to thirty minims, to be gradually increased; but the recent infusion is the best method of ad-

* The taste of the officinal lozenge is very disagreeable to some, as the gaultheria does not disguise the nauseous taste of ipecacuanha. To obviate this, Mr. J. F. Hayes, of the St. George Pharmacy, has, at my suggestion, made troches containing one-twentieth of a drop of oil of cinnamon, or one drop fluid extract of coca, either of which completely covers the taste. Samples of these lozenges were shown at the meeting.

ministration. This remedy seems also to have fallen into undeserved neglect. Cases that have been recorded satisfactorily establish its good effects when used in conjunction with proper hygienic care of the patient.

When the larynx is affected, it appears irritated and swollen by the constant efforts at coughing, and often displays ulcers, which are usually secondary, and not tuberculous. Much relief will be obtained by habitually restraining the spells of coughing; by local treatment (sprays of lime-water, etc., or applications of iodoform in ether, etc.), gargles of weak astringents, or lemonade containing white of egg; or by demulcent lozenges (marshmallow, or chlorate of potash, etc.) allowed to dissolve slowly in the mouth. Local applications to the larynx are often of great service, especially in tubercular ulceration. In men, allowing the beard to grow sometimes greatly relieves the throat trouble.

Pains in the chest may be dissipated by liniments, to be mentioned hereafter, such as turpentine, camphorated oil, chloral in soap liniment (ʒss in ʒvj). The mild continued counter-irritant effect obtained by a belladonna or porous plaster is also valuable. The substernal tenderness and soreness of the abdominal muscles may be obviated to some extent by lying upon the front of the body and allowing the head to hang over the bed during the morning spell of expectoration and coughing. A flannel bandage constantly worn around the waist sometimes affords a relief not to be obtained by drugs. The sedative effect of the constant galvanic current will not only often relieve the local symptoms, but also affect the general system very favorably.

Hæmoptysis requires rest in bed, ice to the chest (thirty minutes on and fifteen off), and the internal administration of ergot, ipecacuanha, acetate of lead, or gallic acid. Tincture of iron, or Monsel's solution greatly diluted, in urgent cases, is recommended to be used in the hand or steam atomizer; but, as this excites cough, I have never employed it, preferring to keep the patient in as passive and quiet a condition as possible. If the hemorrhage is serious, ergot or ether given hypodermically may check it, as in post-partum bleeding.

Dyspnœa, or air-hunger, when it indicates an over-accumulation of secretions in the lungs, and especially if emphysema be present, may be quickly relieved by an emetic like ipecacuanha, which has especial advantages in pulmonary engorgement, or by the yellow sulphate of mercury, or by apomorphia given hypodermatically (gr. 1/6), when a quick effect is desired. When the breathing capacity of the lungs is greatly reduced by the disease, inhalations of oxygen have proved highly serviceable. When the lungs are choked with catarrhal or inflammatory products that are tenacious and inspissated, the use of ammonium chloride in twenty-grain doses, frequently repeated, or given in smaller dose with the iodide of ammonium or potassium, yields remarkable results. They are commonly given in the compound liquorice mixture, to which the syrup of senega or tincture of ipecacuanha is often added. As the dyspnœa may be due to pleurisy or emphysema, the chest should be examined to determine any physical cause that perhaps may admit of removal. Strapping the chest with adhesive plaster will sometimes afford great relief from pleurodynia.

Congestions of the lungs, occurring suddenly in the course of the disease, require rest, dry cups, and counter-irritation. As they generally precede hæmoptysis, the measures adapted to the latter will often need to be called into requisition. Chronic consolidation of a circumscribed portion of the lung often is benefited by a succession of small blisters, which may be conveniently made by the application of cantharidal collodion. This form of counter-irritation is preferable to the use of croton oil (diluted with an equal amount of oil of sweet almonds) or painting with iodine, although both of these are undoubtedly of service. Mercurial inunction I have tried, but the cases are rare in which it can be used with benefit. Possibly those in which it was attended by good results really possessed a remote history of syphilis. In all forms of chronic bronchial disease, the use of inunctions of cocoanut oil, walnut oil, sweet oil, lard, or similar substance, will improve the nutrition and relieve the congestion of the mucous lining of the air-passages. In children, cod-liver oil may be thus administered, applying it at night, and covering the chest with cotton-wool or flannel, or an oiling may be made after the morning bath to the whole skin, and the child wrapped up loosely in a blanket for a half-hour or so. In this way a considerable amount may be absorbed.

CIRCULATORY SYSTEM.

Irregular heart.—In a number of cases of incipient lung disease, I have been struck with tendency to attacks of palpitation and irregular overaction of the heart; and I have more than once traced a congestion of the lungs to this cause. I believe that it occurs more frequently in young men than in women, and appears sometimes to be connected with the use of tobacco. In some cases I have noticed an idiosyncrasy with regard to tobacco. Where there is some hypertrophy, the use of the bromide of potassium (especially in combination with a narcotic, such as chloral or morphia, in order to induce sleep) is serviceable. When the heart is weak and the circulation languid, a cardiac tonic like digitalis, quinia, boldo, or viscum album will prove necessary; but veratrum viride will be required if hypertrophy be marked. It is in the condition of failing circulation that a small amount of alcohol in a hot drink is often of great service. I am strongly of the opinion that stimulants, so called, are out of place in a chronic degenerative disorder like this under consideration, and I believe that cases of consumption reported by Flint and others as cured by large quantities of alcoholic liquors really recovered in spite of the heroic doses prescribed rather than on account of them; for we do not forget the fact that in all these cases alcohol is never the sole treatment, but the greatest attention is paid to general hygiene. Alcohol is really contra-indicated in phthisis pulmonalis, as far as the state of the respiratory apparatus is concerned; but small amounts given guardedly, I believe, may yield more than a temporary benefit from their action upon the stomach and the heart. Probably the best (because most lasting) stimulant for these cases is the fluid extract of coca (℥ss–j), which promptly exerts a marked effect. A bowl of meat-broth, of *bouillon*, or of hot coffee (containing an egg beaten up with cream), or even a cup of tea, is often much more serviceable to the patient than hot whiskey. When a patient feels chilly, exercise in the open air, on horseback, or walking, will often quickly restore him to warmth when a hot fire and extra clothing fail to make him comfortable. Food and exercise in the fresh air are physiological stimulants to the heart and circulation that deserve the highest appreciation, and this fact is well recognized in the various resorts for the out-of-door treatment of phthisis. Where the heart is weak and irregular, the use of digitalis in combination with quinia and a small amount of opium, in the form so highly praised by Niemeyer (quinia, gr. ij; pulv. digitalis, gr. ⅓; pulv. opii, gr. ¼), given three or four times daily, has stood the test of experience; but in all such cases it is important to bear in mind that uninterrupted rest of seven or eight hours at night is a better general tonic than any remedy in the Pharmacopœia.

Fever.—Quinine is sometimes serviceable in the hectic, or, more properly, septic fever of chronic pulmonary inflammation, but oftener fails. I have, however, more faith in salicin (gr. xx), given at least two hours before the onset, which sometimes acts like a charm, as it greatly reduces the fever, and makes the patient much more comfortable; but salicylic acid I have not used as an antipyretic agent in this disease. It should be the rule that, while the fever is on, the patient should lie down, and not be allowed to sit up until it has passed. As the hectic is symptomatic of chronic inflammation of the lung, and possibly septic poisoning, it admits of palliation rather than cure, unless, indeed, we succeed in ultimately removing the cause. If there is much discomfort, sponging the surface of the body with bay rum or vinegar and water is often practised; either hot or cold sponging may be tried. By reducing the febrile action, the same remedies are prophylactic as regards sweating.

Night-Sweats.—Of all the remedies for the treatment of the exhausting night-sweats of consumption, atropia stands at the head of the list for efficiency. It may be given, as recommended by Prof. Da Costa, in a single dose at bedtime (gr. one-sixtieth to one-eightieth), or in smaller doses through the day, as preferred by Prof. Bartholow. Unfortunately, it greatly increases thirst, and gives the patient a parched throat in the morning, to remedy which its combination with ergot or jaborandi has been recommended.* The aromatic sulphuric acid, in doses of from ten to twenty drops, is also quite efficient; so is the oxide of zinc (gr. ij–iij in pill), given at bedtime. Muscarine and physostigma have also been used with good results.

* See an article by Prof. Da Costa in *Medical News and Abstract* for August, 1881, on "The Treatment of Night-Sweats," for a discussion of the relative merits of different anhydrotics.

The hypodermatic injection of homatropine (.015 gm.) has recently been highly lauded by Fronmüller;* and the internal administration of ergotine or fluid extract of ergot has lately been urged in several quarters; but all specific medication will be of but temporary benefit, unless due attention is paid to the bed, ventilation, the clothing, and other hygienic points to be considered farther on. I may say, however, that the addition of alum, or alcohol, or sea-salt, to the daily sponge-bath will greatly reduce the tendency to perspiration, which has been well called a "leaky condition of the skin." This condition may be to some extent corrected by sponging the surface with hot water at bedtime.

Diet.—As the source of energy and the supply of nutritive material, the food of the consumptive is of primary importance. Care must be taken to see that it is in a form easy of assimilation, and that it is sufficient in amount. Too often the "sick one's sickly appetite" is satisfied with a cup of tea or the minimum quantity of food. Such invalids rarely ask for food, and therefore require provision to be made by others. On account of the common coexistence of stomach disorder, or gastric catarrh, the same care is required in regard to starchy articles that easily undergo fermentation, as in ordinary dyspepsia. So important is this point considered that Dr. Salisbury has made it the basis of a treatment of consumption, the success of which in many cases cannot be denied: whether its success likewise establishes the truth of his theory of the cause of consumption is another question. It is certain that cases can recover without restriction from starchy food; and it is probable that a diet containing nitrogen in excess may injure the kidneys and liver, or at least interfere with their functions. Where there is a decided tendency to diarrhœa, boiled milk is the best article of food, and a strict milk diet may be temporarily resorted to. Of all the forms of milk where the digestive tract is in a weak and irritable condition, that known as "koumyss," or milk-wine, is of the greatest service, and many consumptives date the beginning of their improvement from its use. Extract of malt, the hypophosphites, the compound syrup of the phosphates of lime, iron, sodium, and potassium (Parrish's chemical food), are each serviceable as additions to the ordinary food; but the addition of strychnia to the syrup of the phosphates (gr. j to ℥vj) greatly increases its value. Beef-essence, as usually prepared, is simply a nervo-muscular stimulant, but when combined with an egg, as *bouillon*, it is a valuable concentrated form of nourishment. The best way to extract the nutritive juices of the meat is to mince it fine, heat it moderately, and squeeze out the juice in a small wine- or fruit-press (as recommended by Dr. Ely, of Rochester†). Beef-blood, either fresh or in the form known as desiccated blood, excites a natural repugnance in the ordinary mode of administration, but as an enema it offers especial advantages. The method of forced feeding by a tube, as practised by Debove, has attracted much attention, and appears of great value where the laryngeal ulceration has involved the epiglottis to such an extent that swallowing is painful or impossible; but as a general rule the trouble with nutrition is found not so much in the administration of nutritive fluids as in retaining them after they have been swallowed.

It is impossible within my present limits to discuss satisfactorily the diet of consumptives, but I must speak of one article of food upon which I would place the greatest reliance in this disease. I refer to eggs of the farm-yard fowl, given as fresh as possible. The phosphorized yellow fat (*lecithin*) of the yelk of eggs, I am satisfied, is useful for building up nervous tissue, while the albumen replaces the loss by expectoration and hemorrhages. I urge, therefore, upon patients the importance of taking from one to three eggs each day, either lightly boiled, poached, or raw. In the latter form they may be given with coffee (mélange), beef-tea, wine, or beer. Cream is also serviceable in consumption, and where it can be taken freely affords a good substitute for cod-liver oil. I will only suggest, in conclusion, that sick persons should not be rigidly restricted to the formal meals, but should have food suited to their digestion at times most agreeable to them. It is sometimes well to give nourishment in the middle of the night, to break the long fast from tea-time to morning.

The *diarrhœa* of these patients may be kept in check by the use of suppositories of belladonna and extract of opium, in

* New York Medical Record, 1882, p. 437; from *Memorabilien*.

† Proceedings New York State Medical Society, 1882.

conjunction with the milk diet referred to above. Ulceration of the colon and rectum is sometimes greatly benefited by injection of nitrate of silver (gr. ¼ to ʒj). If constipation exist, simple enemata containing a few drops of camphor are preferable to the administration of purgatives, but, when required, cascara elixir or granules of podophyllin, alone or with atropia and strychnia, are better than the more violent cathartics. In regard to the presence of anal fistule, if of long duration, the question comes up whether or not it shall be submitted to operative interference. From a surgical stand-point a fistule certainly should be operated upon; from a medical stand-point I would stipulate it should not be healed too quickly, and on this account I would prefer the ligature to the knife. This, I believe, is also the teaching of Prof. Gross.* The old prejudice against closing a long-established drain in a case of chronic disease is not without foundation in fact, and the practice of opening an issue elsewhere in the body, although lately fallen into disrepute, has the experience of past generations of physicians in favor of it, as well as the authority of eminent surgeons like the late Professors Pancoast and Jas. R. Wood to endorse it.

Nervous System.—Among the peculiar nervous symptoms has been noticed a general erethism, with elevation of all the faculties. Consumptives are quick in their mental operations: this has been noticed by popular novelists, who delight in depicting the patient as unusually bright and hopeful instead of being depressed by the bodily weakness. In this condition, the brain tends to wakefulness. Now, almost the first essential to healthy nutrition is a proper amount of sound, uninterrupted sleep. Some of the measures for the relief of sleeplessness will be referred to hereafter, but of all of them the administration of opium is the most efficient and, at the same time, the most to be dreaded: not merely on account of the danger of forming the opium-habit, but for its evil effects upon the cerebral circulation and general nutrition, is it to be shunned whenever possible. Chloral is better, but is still open to some objections; less, perhaps, when given in combination with bromide of ammonium and camphor water, or with cherry-laurel water. The administration of some light food at bedtime sometimes favors sleep; and lactic or phosphoric acid has also been recommended for this purpose.

The emaciation and debility, in so far as they can be attributable to nervous deficiency, are treated by general measures indicated in the other portions of this paper. I believe, however, that where a tonic is desired for the nervous system, there is none better than strychnia, or nux vomica, given in combination with the phosphide of zinc (Hammond's pill) or the compound syrup of the phosphates.†

2. Remedy Bad Hygiene.

From this hurried review of some of the more urgent calls for symptomatic treatment, where the therapeutics of consumption is too frequently suspended, I pass next to a more important problem, the correction of defective hygienic surroundings; and of the needs of the consumptive in this direction the greatest is pure air.

Ventilation and Fresh Air.—Many cases which have settled down as confirmed invalids cannot bear the thought of fresh air; if they venture out of doors they easily catch cold. Their rooms are so tightly closed day and night that they never get a breath of fresh air except by accident. The evils of this I need not enlarge upon. Great injustice is often done to consumptives by placing them in the crowded ward of a hospital, and, in fact, in the case mentioned at the beginning of this paper, the improvement dated from the time that he was transferred to a more commodious apartment and ordered to spend the most of his time in the open air. When we recall the physiological facts that the lungs are important organs of excretion, and that the presence of a small amount of carbonic acid gas in the inspired air greatly reduces the amount of carbonic acid given off from the blood, and moisture similarly interferes with the delivery of watery vapor from the lungs, the explanation of the dyspnœa in the crippled lungs is obvious. The very nature of the case imperatively demands more oxygen and purer air than in health; and a recognition of this fact lies at the foundation of the rational treatment of consumption. Just here allow me to refer to an illustration that may be regarded as classical. A case of disease cured by a certain regimen is valuable testimony, but

* System of Surgery, Phila., 1879, vol. ii. p. 633.

† When given in solution, strychnia should, on account of its insolubility in ordinary menstrua, be dissolved in a few drops of acetic acid before combining it.

it becomes still more so when it is recorded by the physician-patient who experienced it, and who points to years of successful practice of medicine to witness his means of observation, and brings forward other cases in proof of his opinions. The case I refer to is that of the late Dr. Jos. Parrish, who was well known as one of the leading practitioners in Philadelphia some years ago. Prof. Geo. B. Wood, in his obituary address,* delivered before the College of Physicians, thus alludes to Dr. Parrish's illness: "When about twenty-five years of age, the doctor was affected with a severe and lasting cough, and considered himself in danger of pulmonary consumption, to which he believed that he had a family predisposition, having lost a brother and sister by that complaint. Under a course, however, of vigorous exercise, and from exposure to the air, without the use of medicines, he ultimately surmounted the threatening symptoms. The existence of cicatrices in the upper portion of the lungs, discovered upon post-mortem examination, proves that his apprehensions were well founded, and at the same time affords strong evidence in favor of the plan of treatment which he adopted in his own case, and always strongly advocated" This is well worthy of attention. Dr. Parrish died in the sixty-first year of his age, after having been free from pulmonary disease for a third of a century. During this period he contributed several articles on pulmonary consumption to the *North American Medical and Surgical Journal*, in which he reported a number of cases benefited in a similar way. His opinions are well expressed in a paper entitled "Observations on Pulmonary Consumption," in which he says,† "Before dismissing the subject, I would repeat my conviction that in the management of pulmonary consumption no remedies are so efficient as fresh air and active and continued exercise; and that as a general rule all medical treatment of an energetic character had better be dispensed with. There can be no doubt that the physician may occasionally interpose palliative remedies with advantage, and symptoms often occur in the progress of the disease which require his interference. . . . But," he continues, "taking cases as they usually occur, and considering the various modes of practice which have been adopted and are at present in use, my decided impression is that if the patients affected with phthisis were universally left to themselves, with no other medical advice than to exercise themselves freely in the open air, the general result would be a longer continuance of life and a greater number of recoveries." This is strong testimony; but I must say that I think the therapeutics of the disease has considerably improved since these words were written. I would like to dwell further upon the point, but time forbids; I must therefore refer those interested in the subject to the series of these papers in vols. viii., ix., and x. of the journal above mentioned. I cannot leave this topic without calling attention to the fact that Dr. Parrish was a reformer in his day, and an earnest advocate of a more rational plan of treatment of pulmonary consumption than then prevailed; further experience and extended observation enable us now to say that his views were founded on correct principles, and they must, therefore, ultimately prevail. This tribute, at least, is due to his memory.

Attention to the State of the Skin.—The physiological facts that in some of the lower animals the function of the lungs is supplemented or even substituted by the skin, and that recent observation teaches that in man an equivalent of one-twentieth of the respiration by the lungs is carried on through the common integument, the skin, plainly point to the importance of keeping the skin in healthy condition, and avoiding sudden or severe changes of temperature. The clothing requires more attention than I can here bestow upon it. It should be seasonable, comfortable, and not heavy. The body-linen should be frequently changed, especially if there is much perspiration. I have been surprised, even in private practice, by learning of the number of persons who habitually sleep in the underclothing worn during the day, instead of hanging the suit up to ventilate and dry during the night, as common sense should teach them to do. Such persons get their skin into a very sensitive and relaxed condition; they are easily made to perspire, and are easily chilled, and catch cold on the slightest exposure. They sweat at night, and feel chilly under a pile of blankets. What I insist upon is a well-ventilated room to sleep in, night-clothing that is aired during the day, and frictions to the skin each morning with a dry towel or a flesh-brush.

* Am. Jour. of Med. Sci., vol. xxvi. p. 253.
† *Loc. cit.*, vol. viii. p. 274 (1829).

Faithful rubbing will do more to keep the skin in good condition than frequent ablutions, and of the two the former is to be preferred: consumptives cannot bear frequent sluicing with water, especially in winter, on account of their feeble powers of reaction.

Sleeping Accommodations.—A word concerning the bed seems not out of place. A large number of patients who complain of night-sweating I find are in the habit of sleeping upon feather beds. As these feather beds are handed down in a family as heirlooms, and in the course of time collect a considerable amount of organic matter, especially where children are born and bred, and as they are with difficulty ventilated, and are always hot and interfere with the exhalations from the body, it has struck me that they are the worst kind of bed for a consumptive. I recommend a fresh corn-husk mattress covered with a layer of good curled hair as in every way more wholesome, sweet, and comfortable; but nothing can be better than a good hair and spring mattress.

From what has been said about the importance of undisturbed rest and of a well-ventilated apartment it may be inferred that I think it desirable that the patient should sleep alone. This may be difficult to accomplish, in some cases impossible, but the object to be attained is worthy of the attempt, and it should be insisted upon, even if merely to escape well-meant but ill-timed attentions. I recall one case in which I learned, to my disgust, that a consumptive husband was often wakened from sleep by his anxious but too officious wife, just to ask, "How do you feel?" She cannot wake him now. One incidental but very great advantage is gained by separating the sick from the well, quite apart from any hypothetical danger of communicating the disease: it is this, that the temptation to sexual indulgence is greatly reduced, a form of excess that is particularly obnoxious to the consumptive. The loss of vitality from coitus falls heavily upon the husband, but the sick wife is by no means exempt from evil consequences. I now remember a lady suffering with incipient phthisis, who was subject to unaccountable attacks of congestion of the lungs; she finally told me that whenever her husband had intercourse with her she would be certain to spit blood the next morning. The fact that a consumptive woman is unfit to pass through the ordeal of child-bearing with safety to herself or the child needs only to be mentioned as an additional reason for forbearance and continence.

I had intended to speak of the hygiene of occupation, of dwellings, of personal habits, and of the necessity for regular and temperate living, but I have already far exceeded my limits, and must merely refer to them as potent factors for health or disease worthy of and requiring due consideration. I take leave of this part of my subject, the importance of which you recognize, by repeating the appropriate words of the eminent Dr. Gregory in discussing this subject: "Quamvis multum hic pendeat a prima corporis fabricatione, et varietatibus quas ætas facit, multum quoque pendet a vitæ genere, et victu quo homines utuntur."*

3. Correct the Dyscrasia.

In discussing this point I am fully conscious of the unsatisfactory character of this term "dyscrasia"—a relic of the old humoral pathology—that I have employed, and yet I am not aware of any other that will express my meaning so well. I would merely say that dyscrasia is here used as synonymous with a peculiar general disorder and tendency to recurring special disorder. Denominate it as we may, the fact remains that "all flesh is not the same flesh" in surgical parlance; for while one flesh heals readily and promptly, another shows very imperfect attempts at repair, and gives out granulations of feeble vitality that lead to prolonged suppuration. This tendency to chronic suppuration is one indication of the presence of what has been termed the tubercular or scrofulous dyscrasia. When lesions occur in the air-passages or lungs in such cases, the phenomena are those of the several forms of chronic consumption, varying somewhat in the anatomico-histological site of the lesions, perhaps differing but slightly in their clinical course. This tendency may be inherited or it may be acquired. In either case I think that it can be demonstrated that it may often be overcome by persevering and systematic treatment. The principal means to be adopted are (1) a healthy residence, (2) change of habits, especially from a sedentary to an out-door life, (3) massage, (4) electricity, and (5) the use of certain remedies.

Want of time again forbids adequate

* Conspectus Theoreticæ Medicinæ, London, p. 717.

detailed discussion of these means. Inasmuch as this disease does not exist in certain parts of the world, notably in some mountain-regions, it is very evident that a removal of the patient from a residence in a neighborhood rife with consumption to one where it does not naturally occur is a change that theoretically must be beneficial, and experience amply confirms this view. Such resorts are generally mountain-regions in a temperate zone. The consideration of the advantages of different climates I must defer until another occasion. I would only stipulate that they should be moderately elevated, the climate cool and not too changeable, and free from high winds, and that the air shall be pure and dry. Bennett's well-known contributions upon this topic are familiar to you. I would also speak of a recent paper by Marcet in the *Edinburgh Medical Journal* (vol. xxvi.), "On the Riviera, Madeira, the Canary Islands, and Davos, with Reference to their Climate for Consumptive Invalids." A very good *résumé* of this important question is contained in a recent book by J. H. Tyndale,* which only came under my notice when this paper had been nearly completed. Toner's "Dictionary of Elevations," and Walton's "Comparison of European and American Climatic Resorts," furnish useful information with regard to the elevation, etc. I would especially refer to an article by a Philadelphian, Dr. J. J. Levick, in the *Philadelphia Medical Times*, on the Adirondack Region,† and to a communication made by Dr. C. T. Williams‡ to the International Medical Congress of 1881, with regard to Davosplatz especially. I would say, however, that altitude does not express the sole requisite; some mountain-resorts are notoriously damp, while it is well known that the consumptive needs *dry* as well as pure air, and if he can secure a sanitarium where pine woods lend their ozone he will have an additional advantage. The meteorological changes should not be too sudden, nor the winds very high, for the consumptive invalid, but a cool climate upon an elevated plateau protected by a range of foot-hills will afford a new lease of life. Of such resorts, those of Colorado are the best known in this country; but there are some in the Alleghanies that deserve mention. Of these, Kane, in Northwestern Pennsylvania, with an elevation of over 2200 feet, has already some reputation.

Drs. Parrish and Wood highly recommended Schooley's Mountain, in New Jersey; but there are many sites in the Alleghanies that I think offer superior advantages.

The climate of St. Paul, Minnesota, is well adapted to the treatment of incipient phthisis, in young adults especially; and Colorado also enjoys a reputation as well earned as the Davosplatz, in the Alps; but, like the Himalayas and the Andes, these famous health resorts are in many cases too far from home for an invalid to visit without too much fatigue. The dry, rarefied air produces quickening not only of respiration and circulation but also of digestion and assimilation; so that where the change is well borne a decided improvement in nutrition and bodily weight is soon noticed. It should be mentioned that if there is any fever present the case is rendered worse by the change, and, as pointed out in the discussion by Dr. Alan Herbert at the last International Medical Congress, if there are organic changes in the blood-vessels, heart, or kidneys, the patient had better not venture into an elevated region.

The sea-shore, although a powerful stimulant to nutrition, is, on account of the density and dampness of the atmosphere, admissible only, if at all, in the earliest stages of the disease.

When patients are unable to leave home, the active exercises recommended by Dr. Jos. Parrish will offer the best substitute; and a change from a sedentary to an active occupation has more than once averted a threatened consumption and established health and vigor in its place. I invariably instruct my patients threatened with consumption to carry on pulmonary gymnastics by freely inflating the chest from ten to thirty times each morning, breathing habitually through the nose. Singing is one of the best methods of lung gymnastics.

Massage and electricity I cannot stop to discuss; they are well known as agents capable of powerfully influencing nutrition; the latter has been employed in the form of general electrization by Prof. Bartholow,§ with good results.

* "Home and Climatic Treatment of Pulmonary Consumption," New York, 1882.

† Vol. xi. p. 813 of this journal.

‡ Transactions, vol. ii. p. 164.

§ Medical Electricity, Philadelphia, 1881, p. 26.

With regard to remedies, although not acknowledging any panacea, yet the iodides appear to approach more closely to a specific influence than any other remedy we possess. Especially do I commend the iodide of iron, in the form of Blancard's pills, which have shown remarkable power over obstinate consolidation of the lung. The iodides of potassium and ammonium are also valuable, not only for their alterative influence, but also for their effects upon the swollen epithelium of the bronchial tubes and air-cells, and for their power of liquefying morbid products and secretions and favoring their removal. The lacto-phosphate of lime and cod-liver oil are very serviceable, but should be given separately, the former in the syrup of lacto-phosphate of lime, and the latter alone or in extemporaneous emulsion with the extract of malt. The benzoates have been tried and found wanting. Possibly they are in danger of falling now into undeserved neglect; they certainly possess certain advantages used in the form of spray, but appear to be less efficient than carbolic acid.

In consumption respiratory stimulants may be needed, and Prof. Bartholow highly commends the use of small doses of atropia with morphia, given three times a day, for several months in succession. Arsenic has also been recommended, but it seems to have its place in the very early stages, where it may be employed to avert or remove a certain vulnerability of the lungs that renders their owner more susceptible to the inroads of disease. Gurjun oil and many other remedies of greater or less repute must be passed without notice, in order to bring my remarks to a close.

Let me, in conclusion, formulate the views I have endeavored to convey, in order that they may be more readily discussed.

Pulmonary consumption is to a large extent a preventable disease, and, as the diathesis may be acquired by exposure and unhealthy modes of life, it may, on the other hand, be remedied by proper attention to hygiene.

Consumptive patients can in many cases be cured by strict attention to hygiene: where medical aid is required, it should be conducted on the principle advocated by Chomel, "of treating the patient and not the disease."

Among agencies useful in the treatment of consumption, drugs occupy a secondary position, and the principal reliance is to be placed upon exercise in the open air, adapted to the patient's strength, with due attention to the skin, proper food and clothing, and the use of well-ventilated sleeping-apartments.

A therapeutic method based upon the pathology of the disease and the ascertained action of remedies (experimental and empirical), and which cures patients, is a rational treatment of pulmonary consumption.

THE ORIGIN OF THE BLOOD-CORPUSCLES.

BY ISAIAH RYDER, M.D.,

Toronto.

THE origin of the blood-corpuscles has long engaged the attention of medical scientists, and the theories that have been advanced are numerous. Nevertheless, there is a doubt as to their origin, and this fact affords the most conclusive evidence that they are still beyond the comprehension of this class of investigators in their primary formation. Some think they are first found in the liver, and others that they find their origin in the spleen, while the majority of the general profession have concluded that they are formed during the passage from the villi to the chyli receptaculum. And a professional gentleman who stands high as a lecturer on physiology expressed the opinion recently that he did not think we should be able to solve the mystery.

One of the most puzzling features in the case is that the white or *chyle* corpuscles are uniform in size, while in the general circulation the red ones vary to no inconsiderable extent.

In the fall of 1877 I made a quantity of non-fermented wine after a recipe used by Mr. Frank Wright, putting it up in bottles and hermetically sealing it. On this occasion I put up, as an experiment, a quantity without sealing, in order to test the value of the grapes used. Some three years after this, an experienced wine-manufacturer was spending a few days at my place, and we tested the fermented wine for the first time, and found it to contain opaque atoms usually found in wine before being clarified, which did not obtain in the non-fermented specimen. It is claimed by some that these atoms are scales of *acetate*

of potassium; but my investigations have led me to conclude that this is a mistake.

It is a common thing to hold the open hand before a lamp and notice the translucency of the fingers. This translucent condition only obtains while the blood is alive, as the hand of a deceased person is wholly opaque. The non-fermented wine when held in the glass close to a lamp presents the same beautiful appearance that is observed in the fingers of a living person, while the *un*clarified fermented wine does not permit the light to pass. These opaque atoms float till broken up by agitation, when, in the course of a day or so, they settle, forming a sediment half an inch in thickness in the rim of the bottom of the bottle.

These phenomena afforded food for reflection, and I asked myself why these atoms did not settle as sediment till after agitation, and finally concluded that they must be the cells known to exist in the fruit, which had been forced out by pressure in obtaining the wine, and which retained the life peculiar to the fruit-cells, the same as obtains with canned fruit. During the process of fermentation these die, and continue to float till broken up by agitation, when they settle as stated. The opacity of these cells appears to be analogous to the dead corpuscles in every respect, and I concluded that this was the origin of the cells that eventually become the corpuscles that are to enter into the structures of our bodies.

This view is sustained by noticing what takes place in making oaten porridge. A small quantity of meal is put into a given amount of water. At first it looks like anything but material for a meal for a hungry person, but after it has "swollen" sufficiently the water has passed into the dry cells and almost wholly disappeared. From this it appears that the cells in our cereals are similar to those in the fruits, excepting that in the latter they are filled with water free from earthy and saline substances, while in the former they are deprived of it by evaporation in the process of ripening.

This is a wise provision, as it enables us to store up a supply of food free from liability to rot or freeze, as in the case of fruits and vegetables. What I have described is not new to any one who has had opportunity to judge in such matters, and, were it not for previously-conceived opinions, would lead almost any one to a conclusion similar to that to which I was myself compelled. The idea that the process of digestion is a chemical one, in which the solvent properties of the gastric juice are employed to reduce the food to the minutest atoms, is evidently a misleading one. This thought, coupled with a generally accepted one that these finely-comminuted atoms are again reconstructed into the blood-corpuscles, has prevented us from seeing what is quite evident when we disabuse our minds of all preconceived notions.

It is well known that all organic substances, when submitted to chemical laws, are resolved back into the inorganic world of unvitalized matter. Decay is but tardy oxidation, and combustion is rapid chemical decomposition. Chemical action always deprives the cells of life. It is equally evident that no chemist has ever succeeded in producing a living organism.

An eminent scientist and teacher of this city once expressed the opinion that blood-corpuscles might be produced by a chemical process when we had made sufficient scientific progress. This illustrates how largely the idea of chemical action in the vital economy obtains with chemists; and when we remember that the lectures on chemistry in a medical school teach similar views, it is not difficult to see how far this sentiment obtains in medical circles.

Vital laws organize, while chemistry breaks down organisms. They stand diametrically opposed to each other. And it is evident that we require a new scientific department, that of *vital science.* At least, we must separate these, so that we shall be able to discriminate more clearly between these opposing forces. Synthetical chemistry has been our hope, but it can deal only with inorganic matter. It has been asserted that in 1844 some celebrated French or German chemist succeeded in producing living germs; but the experiment has never been repeated, and none suppose that it is possible. This would be a crowning achievement, and would certainly never have been allowed to lapse, or be forgotten, if it had ever been accomplished. I think we have hoped in vain, and must acknowledge that we have failed.

A broader view of the operations of nature leads us irresistibly to the conclusion that God has reserved to himself the power of endowing matter with life. This wonderful feat obtains only in the domain

of natural laws. The evident delusion of spontaneous combustion has not been sustained, though it was accepted by many. There must be a primordial germ, endowed with life from the hand of the Creator, which, under favorable circumstances, may develop into one of its own predestinated class. If the account of the creation as given in the book of Genesis be accepted as at all worthy of credence, it lends its influence in sustaining this view.

The living cells which we recognize as the blood-corpuscles must of necessity find their primary source in the realm of vegetable growth. This is the first part in the process of elevating the "dust" from which man was made into that wonderfully interesting being. The cells are specially formed in the production of the fruits and grains, and receive and enhance vital endowment over the cells of the green herbs which were given to the beasts of the field. We partake of them as food, and thus receive an increased fund of life from the vital fluids which are derived from the arterial current, under the process of intestinal digestion, and are conveyed to the circulation as white or *chyle* corpuscles.

Before they are received into the circulation they are uniform in size and general appearance. The difficulty in understanding how the red corpuscles vary in size in the vital current has been solved by a Boston scientist, F. G. Fairfield, who has recently shown that the primary cells are enclosed in a structureless membrane supposed to be derived from the albumen of the blood. He detected them associating together, as described, in odd numbers of three, five, nine, and fifteen. This accounts for the variation in size that has been noticed by all who have examined the vital fluid.

This appears to demonstrate that it is in the aërated corpuscles that "innervation" takes place; so that we should possibly be correct in assuming that the individual cells which are to form the special classes of tissue, as the bones, muscles, nerves, etc., are gregarious, choosing their own kinds, as with animals and men.

23 Lisgar Street, Toronto, May 24, 1882.

Post-Partum Hemorrhage.—Two cases of hemorrhage after delivery, cured by injection of the tincture of the chloride of iron (diluted, 1 to 4), are reported by Herbert Thompson in the *British Medical Journal* for May 13, 1882.

PRE-NATAL CHATON.

BY JAMES L. TYSON, M.D.

THIS pathological condition, the result of spasm in the horizontal fibres, or "hour-glass contraction," at any given point from the cervix to the fundus uteri, is, happily, of rather rare occurrence in the early stages of parturition. Two such cases, occurring in the same patient, have been presented to my observation within the past three years, and I am induced to record them from my note-book by having my attention called to a case recently reported in a New York medical journal, where a most peculiar measure, it struck me, was inaugurated,—the operation of version, and subsequently craniotomy, resulting, as might be supposed from the whole history of the case, in the death of the mother from exhaustion. If the irregular contraction be fully apprehended by the accoucheur, with a vertex presentation and proper dilatation of the os, cervix, and external tissues, and the forceps can be securely applied, why thrust the hand beyond the constriction, after administering chloroform, which secures a relaxation of the spasm in the circular uterine fibres, and effect version? What possible benefit could result from so harsh a procedure? Should the pubic arch be contracted and the pelvic outlet be insufficient, the fœtus dead and the head too large to pass, it might well be conceived that craniotomy, then and there, could alone save the life of the mother, and she be spared the time and exhaustion incident to a double process, which I am unable to regard, under the circumstances, as other than unwise and unnecessary.

I had attended a lady in four confinements, neither of which offered any unusual or untoward event. On the fifth occasion I was called in the night, and found her in the following condition: the external parts were yielding and dilatable, the os and cervix were fully dilated,—the liquor amnii having escaped,—the occiput to the left acetabulum, with powerful but brief uterine contractions, which appeared to exercise no influence on the progress of the labor. Making an exploring examination on the absence of a pain, I found, at a point high up, embracing the lower part of the abdomen and femoral articulations of the fœtus, a firm constricting band, which on the return of a pain caused

her much suffering. She declined ether and the forceps, having always expressed a horror of both, but at length, after being in labor several hours, with no appreciable advance, she consented to the latter, as she felt satisfied that the child was "held back" and could not be born without artificial means. These I applied, and after almost desperate efforts succeeded in overcoming the resistance by degrees, and in pulling the fœtus through the constriction, about one-third from the fundus uteri. The child, a boy, though nearly psychoragic, was eventually restored, and both mother and child ultimately did well. The birth was, of course, attended with considerable pain, mainly in the constricted part, which would have been greatly mitigated had she taken an anæsthetic.

After a lapse of some two years, at the next parturient period there was found to exist a condition similar to that above recited, except that the spasmodic constriction appeared to embrace the body of the fœtus below the shoulders, as high up as the superior strait in the pelvis, corresponding to a line drawn from the two cristæ ilii, a little less than midway of the body of the uterus. It may be observed that the labor here encountered an earlier check than on the previous occasion, nor had the liquor amnii come away. On the advent of a pain, the sharp, lancinating stricture was terribly severe, the lady describing the sensation to be like that of a vice, or of a cord tightly drawn over delicate and sensitive points, which she referred to the umbilicus, and on each side, and at the back. The labor made no progress, though hours had elapsed since its inception. She was a good deal exhausted, and not at all averse now to have me apply the forceps, but this I found to be impracticable. So soon as one blade was introduced and I was about to adjust the other, a pain would follow, and the head, already high up in the pelvis, would suddenly disappear, retracted by the constringing power of the horizontal fibres, which caused it to nearly turn on its axis, leaving the part just occupied by it an open space or cavity. This repeatedly occurred, and the position was as often carefully verified by the touch. It was the middle of the night. I had no one to consult with or aid me but an ignorant, stupid, so-called nurse, frightened out of what little sense was left to her, and two friends of the lady herself, who would have been much more useful had they been absent. In view of the condition of things, and realizing, in an old pun, the *superior strait* in which I was placed, I at once determined to resort to the combined influence of anæsthesia and oxytocia, whether my patient consented or not. I found her amenable to reason, and immediately gave her ℥ss vin. ergotæ, and caused her to inhale a mixture of one to three parts respectively of chloroform and ether. Their beneficent effects were soon apparent, and but little plaint was uttered from that time. The spasm of the uterus slowly relaxed, and the cutting pains in the parts involved gradually ceased, while the expulsive efforts, induced by the ergot, went on so regularly and harmoniously that in about one hour and a half she was delivered of a large, healthy boy, and no trouble ensued, the secundines following on slight traction of the funis. At no time was she entirely under the influence of the anæsthetic, nor was it desirable that she should be, nor did I intermit an occasional teaspoonful of vin. ergotæ.

It may not be out of place here to remark that I am no advocate for the indiscriminate and frequent employment of forceps in obstetrics, and venture to observe, from what I have seen in hospital and city and country practice for many years, that more permanent injuries have been inflicted upon the mother than benefits have resulted from their use, especially in the last decade, and language is inadequate to express my repugnance to, and condemnation of, their present reckless abuse. First employed by a *quack* and the secret retained for years, he is only one who most frequently—and too often, it is feared, for effect, or, as sometimes avowed, "to save time"—resorts to them. That conditions arise where their employment becomes not only imperative but indispensable to preserve the life of the mother and child, or to abbreviate protracted suffering, is a foregone conclusion, and were their use reserved for such we should hear less of their abuse, and the pernicious consequences, either immediately or remotely, thereby often entailed. The trite but true adage is always applicable,—"a meddlesome midwifery is bad."

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CASE OF LUMBAR ABSCESS FOLLOWING TYPHOID ULCERATION AND PERFORATION OF THE BOWEL.

BY C. W. DE LANNOY, M.D.,
Chester, Pa.

MR. E. E., æt. 45, applied to me some five months prior to his death, when I ascertained the following:

Thirty years ago, while in New Orleans, he was treated for a right psoas abscess which opened spontaneously at the inner half of the right groin. After a year or more the discharge entirely ceased. During the subsequent twenty-eight years his health was, without exception, most excellent, so that he was able to follow the occupation of master-bricklayer and building-contractor. About one year and a half previous to calling upon me, he had a severe illness, which his physician called typhoid fever. As he stated, however, that solid food was not withdrawn from his diet, this fact, in face of the usual dietetic measures peculiar to the treatment of specific typhoid, throws some doubt upon his statement as to the diagnosis. I might here mention that he resided within a stone's throw of the Delaware River marshes, where malarial affections are the common complaint, and that typhoid in this locality is not infrequently preceded by unmistakable evidences of periodical disease. The patient claimed never to have thoroughly recovered from this fever, the general health remaining poor, while he became subject to deep-seated pain in the right lumbar region. He had also a flatulent dyspepsia, and diarrhœa alternating with constipation. Physical examination revealed great emaciation, with distended stomach, rapid and feeble cardiac pulsation,—all conditions peculiar to exhaustive structural disease. In spite of the pain referred by him to the lumbar region, repeated examinations of the urine only afforded evidences of general prostration, but nothing attributable to structural disease of the kidneys. During the time, or shortly after, that the bowels would be constipated, some tumefaction was always manifest in the right loin,—sufficient swelling, in fact, to contrast visibly with the dimensions of the left lumbar region; this tumor, of the consistence of moderately soft dough, could be reduced by pressure, and reduction was shortly followed by relief from pain and evacuation of the contents of the bowel. At a time when there were loose evacuations, a slushing noise could be elicited by making pressure with the palm of the hand and suddenly removing it.

Taking into consideration the above facts, ascertained from physical examination, adding thereto the history of previous lumbar abscess, and, possibly, typhoid fever with perforation, the diagnosis becomes evident,—namely, that the destructive process during suppuration in the lumbar region had subsided, leaving a post-abdominal cavity, into which, during the course of typhoid fever, an ulcer of the ascending colon had perforated, establishing an orifice of communication, through which the contents of the bowel found free egress. The low asthenic condition of the patient precluded all possible operative procedure, and in the way of treatment little more than dietetic, restorative, or tonic measures were attempted or even proposed. I would state that great care in diet, the selection of food leaving little or no fæcal residuum, giving articles digested in the stomach or duodenum, proved a potent factor in the relief of pain and regulation of the bowels: in fact, it was through a most deplorable indiscretion in diet (the eating of a large piece of watermelon and some pears) that my patient provoked a severe attack of diarrhœa, which soon became dysenteric. Sixteen-grain doses of ipecacuanha, twice repeated, corrected the bloody character of the stools, but death, preceded by collapse, was the result.

A post-mortem examination was not only granted, but had been frequently requested by the patient previous to his death. The greatest possible emaciation existed, a condition which had increased to an alarming extent during the fatal dysenteric attack. Opening the abdomen by a crucial incision (for I intended reaching the cavity in the back through the cavity of the bowel), the omentum was found adherent to the entire ascending colon, and along the line of Poupart's ligament the adhesions were most firm at the ileo-cœcal junction, and a fibrinous adhesive membrane was connected with the vermiform appendix. Dissecting off the omentum, and exposing the ascending colon, its posterior wall was found to be flattened out and closely applied to the posterior wall of the abdomen: at least this condition existed as high up as half-way between the hepatic flexure and the cœcal terminus. Making an incision on the front wall of the cœcum, and exposing its cavity, an opening was found, situated about on a level with the ileo-cœcal valve in the posterior wall of the bowel, measuring three-quarters of an inch in diameter. This opening led into a sac three by four inches in diameter, with sinuses radiating in different directions from its circumference.

Sinus No. 1, direction downward, outward, and forward, reaching to within one inch below the anterior superior spinous process of the ilium, and bifurcating at that point, the internal bifurcation leading to a post-peritoneal cavity, occupying almost the entire right true pelvis; the external bifurcation passing downward and inward about two inches, on a line with Poupart's ligament, where the fundus of its *cul-de-sac* corresponded with the integumentary cicatrix,

referred to as the point of opening of the psoas abscess.

Sinus No. 2 extended upward until reaching a level with the crest of the ilium, then passing deeply downward and backward it included in its passage the transverse process of the fifth lumbar vertebra. The internal surface of the ileum was devoid of periosteum, and slightly caried. A branch sinus extended up along the right side of the spine to a point opposite the eleventh rib: the latter as well as the twelfth was badly necrosed and crumbled under the fingers.

The entire cavity above indicated was lined with a shining membrane, and contained more of the same loose fæcal matter characteristic of his late illness. Dr. O. P. Rex, who had charge of this patient while an inmate of Jefferson Medical Hospital, may be able to furnish additional points of interest connected with the history of this curious case.

CHESTER, DELAWARE CO., PA., May 15, 1882.

SOME IMPROVED EAR-INSTRUMENTS.

Read before the Philadelphia County Medical Society, March 15, 1882,

BY GEORGE C. HARLAN, M.D.

STRONG caustics, as chromic, nitric, or chloro-acetic acid, may be applied almost painlessly to small polypi or granulations in the ear if the application is so limited that the sound tissue is not touched. To accomplish this, or to perform any other operation in the meatus or tympanum, it is, of course, necessary to have a good view of the parts and one hand free. I have not found the forehead mirror entirely satisfactory for this purpose, as the slightest movement of the patient's head, or of the operator's, as he turns to pick up an instrument, obscures the view and necessitates a readjustment. The mirror which I now exhibit is held upon the thumb by means of a spring ring, while the auricle is managed with the second and third fingers, and the speculum is held in place by the forefinger. The ear, the speculum, and the mirror are thus easily controlled with one hand, while the other hand and the head remain free. I have also had a spring clip placed on the back of the mirror to hold a ten-inch convex glass. Some assistance of this kind is a necessity for those of us whose near point is not what it used to be, and all operators will find it an advantage to have minute objects in the meatus and tympanum considerably magnified. This mirror can be obtained of Mr. Kolbe. These two other instruments seem almost too trifling to exhibit, but I have found them of some convenience in practice. The ordinary ear trough, used in syringing, answers the purpose perfectly well, if it happens to fit the ear; otherwise, the water is likely to escape upon the patient's neck: in this one, the wire loop by which it hangs upon the auricle, instead of being fixed, passes through small tubes, and can be accurately adjusted to any ear. It can be procured at Blair's drug-store or of Mr. Gemrig.

This insufflator is adapted to the application of the various powders now so extensively used in aural practice. It is simply the well-known throat insufflator with the curved end straightened and fixed in a soft rubber cone, which fits the opening of the meatus.

TRANSLATIONS.

RESORPTION OF SEQUESTRA.—At a meeting of the Paris Société de Chirurgie, held May 17, 1882 (*La France Médicale*), M. Lannelongue presented the result of a series of experiments which he had made upon the resorption of sequestra. A fragment of a human humerus was embedded partly in the medullary canal of the tibia of a rabbit, and partly in the osseous structure; in the other tibia a similar plug of ivory was inserted for comparison. At the end of two or three days the animal was killed, and the tissue-changes carefully noted. Changes were observed both in the bone and the ivory, but more in the bone. The microscopic appearances were particularly interesting. "That which remains of the bony plug is covered by numerous embryonic elements, which bury themselves in a series of depressions formed at the surface. All the cavities into which it is channelled, the Haversian canals themselves, are full of embryonic elements, and the young elements form at the level of the compact portion of the tibia a complete cement (*soudure*) between the living bone and the experimental sequestrum."

From these experiments it results that a part of a dead bone introduced into a living bone can be absorbed and replaced by

an osseous tissue of new formation. This fact had not been previously demonstrated experimentally.

In addition, M. Lannelongue had attempted to produce this absorption in other tissues, and in serous cavities, but without any result. In order for the experiments to succeed, it is essential that the sequestrum be not bathed in pus, and to prevent this it is necessary to employ all the means of the antiseptic system to prevent suppuration. From a number of experiments, in some of which the sequestrum entirely disappeared, the author formulated the following conclusions:

1. The absorption of sequestra is a fact which is demonstrated by experiment.

2. The suppuration in the sequestral capsule around the sequestrum itself is an obstacle to this absorption.

3. The absorption of dead bone takes place more promptly and more easily than that of ivory; moreover, it is followed by the formation of new bone. Therefore ivory should be preferred in resections where it is desired to maintain the fragments by one or the other of these means.

4. The bone for this purpose should be carefully disinfected before being used.

TREATMENT OF COMPLICATED OPHTHALMIA NEONATORUM BY THE COLD DOUCHE.—The simple form of babies' sore eyes gets well almost always with simple treatment, but not so the graver forms complicated with swelling, corneal ulceration with or without perforation, and protrusion of the iris. These corneal ulcers have a tendency to extend deeply, and, in spite of the most careful treatment, to lead to perforation, and finally to atrophy, of the eye. The best means of preventing this accident, and of curing the inflammation, is, in the opinion of Dr. O. Paulsen, of Hamburg, the cold douche (*Berlin. Klin. Wochen.*, May 29). He recommends that a bucket of cold water be placed at a slight elevation, and a long rubber tube (5–6 mm. in diameter) used as a siphon to bring the douche to the desired spot. The child is held upon the left arm of the nurse, and with the right hand the head is held fixed, so that the water can descend with some force upon the affected eye. The first application of the douche should last only a few seconds, later it may be extended to two or three minutes; it is to be used at first every quarter of an hour, and later every half-hour, or less often, according to the gravity of the case; but it is better to use it too often than too seldom. The effect upon the tense swollen lids is very soon manifested, the secretion also lessens, and any incipient ulcers are relieved from the pressure and the pus, and as soon as this is accomplished the chief danger is over. Still, the greatest care must be kept up, and every half-hour at least the eyes should be looked after. It is of use to add chloride of sodium to the douche, a few handfuls to the pail of water. The temperature at the beginning should be from 12°–15° R. (59°–66° F.); later it can be reduced according to circumstances. With this treatment, the use of nitrate of silver, in mitigated or pure stick, properly applied, must not be omitted; but the greatest care must be taken to prevent its coming in contact with the cornea.

THE TOXIC EFFECTS OF JAPANESE STAR-ANISE (*Illicium Religiosum, Siebold*).—As a result of the eating of some seeds of the Japanese star-anise, several children were poisoned in Tokio, Japan. Frothing at the mouth, profuse vomiting, and cramps were observed in all, and three died within two hours. A. Langgaard, in *Virchow's Archiv* (lxxxvi. 222), reports these cases, and also a number of experiments to determine the physiological action of the drug. All parts of the plant were poisonous to frogs. From an alkaline extract of the root the same effects were produced as by the seeds. The principal symptoms were cramps, which in both warm- and cold-blooded animals were of long duration, and, according to the author, were due to a direct effect upon the centres in the medulla oblongata. Previous to the cramps there was a stage of decrease of reflex irritability, as a result of irritation of the inhibitory apparatus. In frogs, after the cramps had lasted for a time, a period of rest and exhaustion ensued, but later, with increased reflex irritability of the spinal cord, the cramps again appeared.

Small doses in guinea-pigs lowered the pulse, from irritation of both the central end or origin of the vagus and its intracardial terminations; the irritability of the trunk of the vagus was not reduced until later. Large doses killed by producing cardiac paralysis, small ones by paralysis of respiration. Only the minimal lethal doses were counteracted by chloral hydrate; in the large doses it was ineffectual. The author claims that the same results are pro-

duced by the genuine star-anise (*Illicium anisatum, Lureiro*), though it is less active. —*Centralblatt für Med. Wissenschaften*, No. 21.

A NEW CHOLAGOGUE—THE EFFECTS OF TOLUOL-DIAMINE UPON THE ANIMAL BODY.—Stadelmann, from a series of experiments upon dogs, first confirmed the fact noticed already by Schmiedeberg, that this agent was capable of causing decided and lasting jaundice, and next proceeded to determine its cause. His observations made upon animals, both with biliary fistula and without, were carefully conducted, and demonstrated that in general, within twenty-four hours after the administration of the remedy by the stomach, hypodermically, or intravenous injection (the first being slower than the others, as a rule), bilirubin and biliary acids appeared in the urine, but hæmoglobinuria occurred in only one out of between thirty and forty cases. The effects of the remedy remained only for a few days. The author believes that the results are to be explained by a resorption icterus, due either to duodenal catarrh or some acute disorder of the capillary circulation in the liver: the blood-pressure, however, in other cases was not altered, at least within the first three hours after giving a full dose (3 grm.) of the remedy. Where the biliary fistule existed (it had been *in situ* for eighteen months, and the dog was well), in both cases polycholie first occurred, under the influence of which the icterus began; later there was a marked thickening of the bile, which apparently afforded an opportunity for reabsorption of the bile. It is noteworthy that in cases with biliary fistule a much greater quantity of the remedy was required than in others, and, besides, that the jaundice rapidly disappeared.—*Zeitschr. für Exp. Pathol.*, etc., xiv. p. 231; *Centralblatt für Med. Wissenschaften*, No. 21.

THE VITALITY OF TRICHINÆ IN LARD AND OTHER SALTED FOODS.—It is generally believed that trichinæ lose their vitality after two or three months in salted food; but this has been refuted by the experience of many of those who have eaten salt meats without previous cooking. M. Fourment has recently made some interesting experiments with lard which microscopic examination had shown to be infested with trichinæ. He took a small portion and enveloped it completely with salt, and after keeping it for twelve months (which, added to the time since it was first salted in its preparation for the market, amounted to about fifteen months) he washed out the salt, and fed the lard to some mice: the trichinæ were so little affected by the salt that they promptly developed, and soon increased to such extent as to cause fatal infection.

Salting, therefore, does not destroy trichinæ, at least within a period extending beyond the time within which the articles of food are usually kept. Moreover, the salting has the power to a certain extent to reduce the effects of heat; for experiment has shown that it is very difficult in ordinary cooking to raise the interior of a piece of meat to the temperature of 100° (C.), even after several hours' boiling or roasting.—*Revue Médicale*, No. 5.

CÆSAREAN SECTION FOLLOWED BY ABLATION OF THE FUNDUS UTERI (PORRO'S OPERATION).—M. Guichard reported to the Société de Chirurgie, Paris (session of May 3–10, 1882), the following case. The patient, 25 years of age, measured only 1.08m. (42½ inches) in height; she presented a marked kyphosis occupying the lower part of the dorsal region. Arriving at full term, the uterus revolved downward and forward, and formed a large tumor like a bag descending almost to the knees. Digital examination revealed a narrowing, obliquely oval, of the superior strait; but the principal obstacle was seated at the level of the inferior strait, which measured in its transverse diameter only 4 centimetres. Cæsarean section was performed, and a child extracted, which survived. Immediately afterwards he excised part of the uterus, and the pedicle was included in the suture of the abdominal wall. The rules of the antiseptic method were rigorously carried out. On the second day a slight hemorrhage required the application of an elastic ligature. The patient died the next day, with symptoms of peritonitis. The skeleton of the woman was presented, which was remarkable for its vertebral curve and the form of the pelvic basin.—*Bulletin Général de Thérapeutique*, May 30.

THE application of carbolic acid to prevent the pitting of smallpox, by cutting open the vesicles and applying the lotion directly at the height of the vesicular stage to each vesicle, has been tried by Mr. Makuna, with good results.—*Royal Medical and Chirurgical Society*, May 9, 1882.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, JULY 15, 1882.

EDITORIAL.

THE OLD STORY.

EVER since the *Philadelphia Medical Times* came under its present editorial management it has consistently sought, by every method in its power, to expose the atrocity of the American system of medical education, and the need of legislation upon the subject,—to reiterate the abundantly-proven truth that the profession cannot regulate itself unless its representative body or some central organization be clothed by law with power. The principle has at last been recognized in this and other States, that the interference of the law with the profession is necessary; but, unfortunately, instead of the control over the profession having been given to some representative bodies, it has been handed to irresponsible medical faculties or trustees, whose interest it is to throw wide open the doors of entrance, and, by fair means or foul, to increase the crowd who pay toll to these faculties as they pass in to what is represented to them as fair meadows yielding fruitful harvests of fees to the most indolent cultivators, but what many of them find very barren pastures.

Legislation has not done enough. The editorial war must still go on until it is recognized that medical colleges should be educational institutions merely, not peddlers of the right to vex, worry, and destroy a long-suffering community that has so far endured with stupid patience, but which, like the beast of Balaam, may finally find a voice.

We hail with delight every new birth of a medical college, as a further addition to the burden which will only be laid aside when its weight grows so heavy that it can no longer be borne. It may not be known to all our readers, but the enterprising firm which publishes the *Medical Gazette* also sells to the world a printed list of physicians' addresses. The following letter was recently received by this firm, and we give it in full as chronicling a new birth, and as an example of what material is required in this land of freedom for the construction of an institution which gives the right to practise medicine:

"COLLEGE OF PHYSICIANS AND SURGEONS,
"JOPLIN, MO., 5, 28, 1882.

"GENTS,—Please send *price list* of *Doctors*, and *Drugist. Names*. by states as I want to mail *several thousand* Annual *Catalogues* to the *Profession*, all over the U. S. A. and canady. I am starting an embriotic Pioneer-Medical College and I must, of necessity, noise it around to the world to make it pay me. An early reply will greatly oblige your Respectfuly, &c. J. C. PETIT, M.D., Dean."

DEATH FROM CHLOROFORM.

FROM South Carolina comes a report of a death occurring under particularly painful circumstances during chloroform administration. We gather from the daily papers the few facts that we have in regard to the case, which in its features merely repeats the well-known formula of trifling surgical operation, administration of chloroform, sudden failure of circulation, ineffectual attempts at restoration, and death. As we have not the medical report before us, we refrain from comment; but we may say in general terms in regard to the practice of chloroform administration, that the deaths are not in proportion with the gravity of the operation to be performed; they occur soon after the administration has begun, and treatment is generally ineffectual, the patient being almost or quite dead before the attendants realize that there is anything amiss. Patients have been restored, however, by inversion of the body, by flagellation of chest and nates, by inhalation of nitrite of amyl, and by intravenous injections of ammonia;* and chloroform should not be administered without having these means

* Dr. Neild's case, Medical Times and Gazette, 1871, p. 616.

of restoration conveniently at hand, nor by any one who is not able and ready to use them at the first symptom of cardiac failure. Indeed, chloroform should not be administered at all except under the sign of the skull and cross-bones, to give the patient fair notice of his danger.

IN the annual address of the President of the State Medical Society, delivered by Dr. John S. Carpenter, of Pottsville, the need of revision of the laws regulating the insane, and of a systematic examination and report on the condition of the various lunatic asylums in the State, was strongly urged. The necessary legislation was afterwards obtained, and a commission recently appointed by Governor Hoyt to investigate and report on the laws of the commonwealth relating to insane persons, especially the criminal insane. The following gentlemen have accepted appointment: L. Clark Davis, R. C. McMurtrie, Dr. S. Weir Mitchell, General John F. Hartranft, Dr. J. T. Rothrock, George S. Harrison, of Philadelphia, and Dr. Joseph A. Reed, of Alleghany.

LEADING ARTICLES.

THE DIAGNOSTIC VALUE OF ELECTRICITY IN CASES OF MUSCULAR PARALYSIS.

FOR many years electricity has been considered our best means for testing the condition of muscles. In the beginning no distinction was made between the faradic and the galvanic current; later, each was specially investigated with the view of determining its diagnostic value.

Marshall Hall first drew our attention to the fact that a muscle deprived of the influence of the spinal cord loses its electric irritability and electro-muscular contractility, and since that time we have learned that in destructive diseases of the spinal cord, when these have reached a certain stage, in which the part of the cord affected is deprived of its function, electro-muscular contractility is diminished or lost. But this is not the case with all muscles; those which are provided with nerves that come from still healthy parts of the cord not only retain their normal irritability to the electric current, but in reality evince increased electric irritability and more energetic contractions. By this reaction alone we may be able to locate a lesion in the cord more definitely, and note if the morbid process advances transversely or if it is ascending or descending. But it would be wrong to conclude that diminished electro-muscular contractility is always a sure indication of spinal lesion. Such decrease appears, too, and very rapidly, if the nerve itself is injured, or if the muscular tissue of a paralyzed part is in a pathological condition, or as the result of certain poisons, as opium, lead, or of the rheumatic or other blood poisons, which, by diminishing the vitality and strength of nerves, muscles, or nerve-centres, cause also a decrease in their electric irritability. In cases like those last mentioned, however, this diminution is only temporary, not permanent, as in spinal lesions, and the employment of the battery for a few days will develop a decided increase in electro-muscular contractility. It is therefore wise in all cases of paralysis, before forming any conclusion as to the diagnosis of a case,—speaking now alone of the diagnostic value of electricity,—to make use of the latter for a short time, and to await any possible alterations in the reaction. Then there are cases of spinal paraplegia and of diminished muscular power in connection with special lesions, as, for instance, locomotor ataxia, in which electro-muscular contractility is apparently normal. We might say that the less the large motor cells in the anterior gray cornua are suffering from the morbid process, and the less the antero-lateral columns participate in it, the less is the normal reaction to electrical influence disturbed, while the same law holds good *vice versa*.

We will first see in what cases of paralysis electro-muscular contractility continues normal. To these belong, generally speaking, all cases of cerebral origin. The paralyzed member may even respond to the electric irritation with stronger contractions than the sound members if exposed to a current of equal intensity. Where this is the case, the investigations of Althaus and others have demonstrated that the paralysis has its origin in a cerebral lesion of irritative character.

The above remarks have reference to the faradic current only. A galvanic current may give the same or totally different results. The muscles of a paralyzed part may respond actively to a galvanic current and not at all to a faradic. This has been observed in traumatic nerve-lesions (Erb, Eulenburg, Ziemssen, etc.), and also in cases of lead-palsy. While we do not know as yet the actual value of this difference for diagnostic purposes, the so-called reaction of degeneration, as specially studied by Erb and Ziemssen, seems to be very important, and we will give therefore a short *résumé* of the observations made by these authors on traumatic injuries of peripheral nerves. For explanation we mention the following: An. O. C. means anode-opening-contraction,—*i.e.*, the contraction that ensues when the circuit is opened with the anode; An. Cl. C., anode-closure-contraction; and Ka., kathode. Normally, the contraction taking place when the circuit is closed with the kathode should be stronger than the one ensuing when the circuit is closed with the anode, while the opposite should happen at the opening, so that a normal reaction could be expressed by the following formula:

Ka. Cl. C. > An. Cl. C., and An. O. C. > Ka. O. C.

Erb and Ziemssen made the following observations on injured nerves:

1. In the *nerve*, after a short time, from two to three days after the commencement of the paralysis, a continuous and steady fall of faradic and galvanic irritability could be noted; a total loss by the seventh to twelfth day; then, with the gradual regeneration, the irritability slowly returned, but only after reacquired mobility of the part.

2. The *muscles* exhibit a different response to the faradic than to the galvanic current. Faradic irritability diminishes gradually till it is totally lost; but the muscles react differently to the galvanic current; they show an increase for An. Cl. C., and also for Ka. O. C., and of such a kind that the law of contraction appears to be reversed: An. Cl. C. > Ka. Cl. C., and Ka. O. C. > An. O. C. With the gradually increasing degeneration this increased irritability disappears again in such a way that successive An. O. C., Ka. O. C., Ka. Cl. C., and An. Cl. C. at last totally cease; galvanic irritability, therefore, also finally is lost. With the returning regeneration, the galvanic irritability returns in the same manner as the faradic. Hermann explains these different reactions to the two kinds of electrical current in this way: the molecules are influenced by the continuously working action of the galvanic current, but not by the short interruptions of the induced current. The peculiar action of young nerve-fibres, which, as is well known, conduct the motor impulses, but not electrical currents, is explained by the anatomical researches of Erb, according to which the motor impulses travel along the axis-cylinder, while the electrical current is conducted along the white substance of Schwann, which regenerates later than the axis-cylinder, which, in lesions interrupting the continuity of nerve-structure, is the first to rebuild again. Even if this reaction of degeneration does not always show itself with the same degree of precision, it is undoubtedly a valuable means of differential diagnosis between central and peripheral paralyses. Then there is a different result if we interrupt the galvanic current; and here again changes are noted according to slow or rapid interruption. We know that in certain cases of facial palsy due to exposure to cold, or in other local paralyses having the same origin, and also in lead-palsy, the muscles affected react as little to the rapidly interrupted galvanic current as to the faradic; but if the galvanic current be interrupted *slowly*, the palsied muscles will exhibit a far greater electric irritability than those of the healthy side. This only tends to prove what we at other places frequently have taken occasion to say, that the view is undoubtedly correct which was expressed first by H. C. Wood, that for diagnostic as well as for therapeutical purposes there is only this difference between the faradic and the galvanic current: the interruption. If we interrupt a galvanic current with the same rapidity with which usually the hammer is set in motion in instruments having no provision made for retarding the interruptions, we will get no other results from it than we do by using the faradic current.

In cases like those mentioned last, the muscles are primarily affected, and the application of a slowly interrupted galvanic current generally meets with success. In all cases of paralysis it is well to note the difference in electro-muscular contractility, according to the application of the slowly or the rapidly interrupted current.

Whenever we wish to test the electric reaction of a muscle, it is well to begin with a weak current, and we place the moistened sponge-electrodes on the muscle or group of muscles to be examined, always comparing the result gained with that on the healthy side. Some difference will be noted accordingly as one of the electrodes is placed exactly where the main motor nerve for that muscle is situated; and to find these motor points easily, special tables have been prepared by Erb, Ziemssen, and Wood, which points, though they do not possess any definite clinical value, should always be selected for diagnostic purposes, as they respond to the entrance of the motor nerve into the muscle, and experience has shown that the muscle is best acted upon from these points.

If a muscle is forced to contract by the electric stimulus, the contraction is felt, and the electro-muscular sensibility increases with the strength of the contraction. Increased electro-muscular contractility goes, therefore, hand in hand, at least as a rule, with increased electro-muscular sensibility. But the latter may exist alone, as we have almost invariably noted in cases of myalgia. Then the relation between diminished electro-muscular contractility and sensibility may be disturbed, as is evidenced, for instance, by the very apparent loss of this sensibility to the current in cases of hysterical paralysis. Generally speaking, the electric reaction of the skin, as elicited so well by the metallic brush, coincides with the reaction of the muscles beneath, the stronger or weaker the last, the more or less sensitive the first.

In conclusion we will mention three laws with reference to the electro-muscular contractility of muscles, laws of which one might say, *regulæ quæ non excipiantur.*

a. If a muscle does not respond to a rapidly interrupted current of sufficient strength, we are not entitled to base our prognosis upon this fact.

b. If a muscle does not respond to a slowly interrupted, powerful galvanic current, that muscle will never regain its function, except in cases of traumatic injuries of motor nerves where there is hope that the interruption in the continuity of the nerve-structure may be remedied by regeneration of the nerve.

c. The electric irritability which a paralyzed muscle exhibits in the beginning is no certain indication *quoad vitam* (of the muscle): we can only base our prognosis upon the irritability which the muscle develops after a regular course of electric treatment of about one week's duration.

While electricity is invaluable in cases of paralysis for diagnostic purposes, massage is far superior to it as a remedy.

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PROCEEDINGS OF SOCIETIES.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

A CLINICAL meeting of the Society was held at the hall of the Society, Philadelphia, March 15, 1882.

FRACTURES OF THE LOWER END OF THE RADIUS TREATED SO AS TO PRESERVE PERFECT USE OF THE HANDS AND FINGERS.

Dr. John B. Roberts presented three cases of fracture of the lower end of the radius, in which perfect use of the hands and fingers had been preserved by proper treatment. He called attention to the surgical anatomy of the injury, and especially to the fact that Barton's fracture—that is, fracture of the posterior edge of the base of the radius—probably never occurs. The ordinary fracture is a transverse break in the bone, one-third or one-half inch above the joint. This may be complicated by lines of comminution extending through the lower fragment into the joint. These points have been especially insisted on by Dr. Levis. The treatment adopted was erroneous, not only from the general misunderstanding as to the nature of the injury, but because the splint used was incapable of fulfilling even the theoretical indications. Bond's splint is still much used, but is certainly unsuited, because the lower surface of the radius is curved, and not straight, as is the splint. The practice of throwing the hand to the ulnar side is also useless in the attempt to prevent deformity, as the manœuvre merely rolls the carpus in its socket, and has no action on the displaced lower fragment. The proper treatment is first to reduce the fracture, which can generally be easily done by flexion of the wrist and pressure upon the lower fragment, and then to retain it by some splint like Dr. Levis's moulded metal splint. Generally the fragment, if comminution does not exist, will remain in place without much difficulty when once adjusted. In Dr. Roberts's opinion, better results would often be attained if the subsequent treatment consisted in merely carrying the arm in a sling, than from the use of the Bond's splint in the ordinary way, without a pad to correspond with the curved radius. It is no uncommon thing to see these fractures treated in such a manner

that, after the cure, the ulnar eminence is on a level with the palmar surface, because the flat Bond's splint has been applied to the arm and hand. As the lower fragment is by the force of the injury thrown upward and backward on the dorsal surface of the upper fragment, impaction may take place, and then more difficulty is experienced in reduction; but such reduction is absolutely necessary to prevent deformity and stiffness of fingers from the extensor tendons becoming involved in the callus.

The general details of the fractures and modes of treatment were explained by blackboard diagrams, after which the three patients were presented for examination.

Dr. Roberts said that two of the patients had each sustained a fracture of one wrist, but that the cure was so good, regarding both anatomical accuracy of adjustment and perfect mobility of joints, that he doubted whether the injured wrist could be detected by all the members of the Society present. He therefore would not mention which arm was injured, but leave each examiner to make his own diagnosis. The third patient was an imbecile old woman who had fallen from a second-story window to a roof, and thence into the yard of her residence. Both radiuses were broken, and it was believed that comminution had occurred. Reduction was effected by flexion and pressure, and the same splints used as in the other cases,—namely, Levis's moulded metal splints. The mental condition of the patient interfered with treatment, for she continually pulled off the bandages and splints; and yet perfect mobility of all the joints was obtained, though considerable deformity from prominence of the ulnus existed. In these three cases, two of which were of quite recent occurrence and the temporary callus therefore probably not yet entirely absorbed, the splint had been worn for three or four weeks; but during the entire time of treatment free motion of the fingers was allowed, and was possible because primary reduction of the lower fragment gave no opportunity for callus and displaced bone to interfere with the tendons.

Dr. Packard thought the cases presented by Dr. Roberts of great interest, and the results obtained in them extremely good. Among the specimens there was one which was almost unique, being a detachment of the styloid process by itself. Another showed extremely well one way in which comminution of the lower fragment is sometimes induced, the upper fragment in a Colles's fracture being driven into the lower so as to *burst* it into two or more pieces. In this way are produced the "starred" fractures, of which two very good specimens exist in the Warren Museum in Boston.

He believed that impaction was the rule in cases of transverse fracture of the radius near its lower end, and several of the specimens shown illustrated it. This view, which was held by Callender (St. Bartholomew's Hospital Reports, 1865), is of much importance in the matter of treatment, since it explains in part the extreme difficulty of reduction sometimes met with, the other principal cause of this difficulty being the tension of the ligamentous structures insisted upon by Pilcher.

Upon careful examination of the normal forearm and hand, it will be found that in front, just above the wrist, there is a prominence marking the lower extremity of the radius, the anterior face of which bone presents a decided concavity. Below this, again, there is the much larger swell of the ball of the thumb. For both these, allowance must be made in fitting a splint in cases of Colles's fracture. A perfect splint would represent an exact mould of the normal parts; but this, of course, cannot be made. Levis's tin splint, shown by Dr. Roberts, answers a very good purpose.

In the treatment of these cases the first essential is the perfect reduction of the fracture, as to the ease of which he thought Dr. Roberts had spoken somewhat too confidently. Sometimes it is indeed very easy, but oftener it is difficult, and cases occur in which it is impossible. The way to accomplish it is not by extension nor adduction, but by careful, gentle, and patient manipulation, with anæsthesia if necessary. The obstacles have been mentioned above.

After reduction, the retention is seldom difficult, but, in his opinion, it would never be safe to let the forearm and hand simply lie in a sling, as the leverage would be too great. He had, however, used a mere block, carved to suit the normal anterior face of the bone, and held in place by adhesive plaster, with the best results. The block was covered first with canton flannel.

Bond's splint, as commonly used, Dr. Packard thought a most inefficient appliance and a fruitful source of deformity. He had seen it employed in an unreduced fracture, the splint being altogether too large, and a pad carefully placed to maintain the interosseous space, which had never been interfered with at all. By effecting reduction and placing the hand and forearm on a well-shaped splint (in this instance that of Coover, of Harrisburg), a really perfect cure was accomplished. He thought it of the utmost importance first to insure reduction, and then to maintain it by any apparatus that would secure that object.

Prof. Henry H. Smith said that two points mentioned by Dr. Roberts had not been sufficiently adhered to in the discussion: first, the existence of such an injury as that known as Barton's fracture, and, second, its treatment by the use of a straight splint or by "Bond's splint." As to the first point, he thought the literature of the subject had not been consulted, and Dr. Barton's original paper would be found in the *Medical Examiner* for 1837;

as to the second, Dr. Smith had seen Dr. Barton make excellent cures by using a straight splint. The hand should always be inclined to the ulnar side to correct the excessive action of the extensor muscles of the metacarpal bone of the thumb (extensor ossis metacarpi pollicis). In using either a straight or Bond's splint, the tendency of the wrist to drop down must be resisted by means of a graduated compress placed in front of the wrist. The "Bond splint" was dangerous without such a compress, and Bond, in describing its uses, had pointed out the importance of a compress in applying the splint. Dr. Roberts's results in the cases shown were very creditable to him, and were the best cures Dr. Smith had seen; but he could not agree with him that a sling alone would be sufficient to treat any case, as the weight of the hand would always be a cause of displacement.

Dr. Schapringer inquired if one of the dried specimens presented did not show that it was of importance to have the hand turned to the ulnar side. It seemed to him that in this particular case a better result might have been attained. He occasionally had used, in the treatment of these fractures, Bond's splint with wooden pads, placing one to the radial and a thinner one to the ulnar side. He had shown these to Dr. Roberts.

Dr. Addinell Hewson said that Dr. Barton's claim lay in the fact that he had distinguished a fracture of the lower end of the radius from a dislocation, but did not intend to confuse this fracture with that described by Colles, of Dublin. Dr. Barton's idea was that the carpus was drawn up between the fragments of the radius, and caused deformity; but both he and Bond always said that the position in treatment must be half-way between pronation and supination, and with the hand thrown up by a compress and over to the ulnar side. Bond intended to attain this with his splint by the block there in its oblique position.

Dr. Roberts, in closing the discussion, said that his remarks were for the purpose of calling attention to the true character of this kind of fracture, and that what he had said in reference to Bond's splint was applicable to many other forms. If the profession will recognize that in most cases of these fractures the entire articular surface of the bone is separated from the shaft and displaced upward and backward, and not merely a corner or edge, as Barton taught, then the case can be properly treated by a skilful surgeon with almost any splint, or, indeed, even without one, although a splint is usually to be preferred. If a wooden pad corresponding to the radial curve is put upon the Bond splint, the latter will answer; but in its ordinary condition it is no better suited to fracture of the lower end of the radius than to fracture of the lower end of the fibula. Impaction sometimes occurs in these cases, and then, if necessary, anæsthesia should be resorted to in the reduction; but he did not usually employ it, as the pain was only momentary. He thought that sometimes surgeons committed mistakes in neglecting refracture after deformity had occurred from improper previous treatment. He had seen recently reported a successful case of refracture done in New York City by Dr. Little, six weeks after the receipt of injury. but had not himself tested it. He was quite familiar with Dr. Barton's original article, but did not believe that the deformity after such fractures had anything to do with the action of the extensors of the thumb. It was the immediate result of the force causing the fracture, which takes place by a cross-breaking strain upon the bone above the attachment of the carpal ligaments. Fractures in this situation were formerly badly treated, because surgeons did not know the pathology of the condition. Now that the surgical anatomy of the injury is well understood, cures with perfect usefulness of the hand and fingers can be usually obtained. This is attested by the patients presented, which were not picked cases, but were all that had been treated by the speaker within two years. One was certainly an unfavorable one, on account of the degree of injury, the age of the woman, and her interference with treatment. Dr. Roberts laid stress upon the fact that the advances in this department of surgery were in no wise due to him, but to Levis and others in America and in Europe.

Dr. John V. Shoemaker called the attention of the Society to the method of treating syphilis by hypodermic injections. The method was introduced to the notice of the profession by Scarenzio, of Pavia, who used calomel in his injections. His attention was called to it by Dr. Julius Kaemmerer, who had used it with very flattering results, and had instructed his pupils Drs. L. Wolff and Edwin Rosenthal in its use. Dr. Shoemaker had been using it for over three and one-half years on one hundred and thirteen patients, with the best results. These patients he had gathered from his private practice, the American Hospital for Skin Diseases, and the Dispensary; and he had brought to the meeting three patients whom he is treating in this way, and on one of them—a case of pustular syphiloderm—he will show its application. He uses as an injection a solution of corrosive sublimate of one grain to one fluidounce of water. He formerly used a solution of six grains of the sublimate to one ounce of water; but, as the hypodermic syringe has divisions into tenths, he now uses the first solution, so as to divide the doses more quickly and accurately. In making the injection, he usually introduces it in the infrascapular and sacral regions, as they are the least sensitive and are well supplied with cellular tissue. He seizes a fold of the integument with the forefinger and thumb of the left hand, and with the right hand drives the needle deep down

into the cellular tissue and forces the contents of the syringe into the tissues; then, withdrawing it by a rotatory motion, he places the finger of the left hand over the puncture, and with the other fingers distributes the contents through the surrounding tissue. He further said that in his practice he had never had any cases of abscesses, which he thinks is due to the precautions he uses. Those who have abscesses do not push the needle in deep enough, or use a rusty needle, which may cause irritation, or inject so that they deposit the solution in a stratum of the cuticle in which the absorbent vessels are wanting, and thus cause the inflammation and abscesses. He also uses the precaution to tell the patients to provide themselves with their own needles, thereby preventing any possible contagion; and he always prefers a gold needle, as it is the only metal not acted upon by the solution of corrosive sublimate. In conclusion, he spoke of the erroneous opinion held by physicians in regard to what they termed albuminate of mercury. He maintained there was no such compound: what we termed albuminate was an albuminous solution of mercury. He said the reason why corrosive sublimate did not act properly when administered by the stomach was that it had formed an insoluble albuminous mixture of mercury, and did not remain long enough in the body to become absorbed. The result of his experience in the one hundred and thirteen cases showed that it required almost six grains of the corrosive chloride of mercury hypodermically to complete the cure in an ordinary case. He also exhibited (on invitation) a case of *tubercular lupus* of the face, and showed the mode of treatment as pursued by him at the American Hospital for Skin Diseases. He scraped the parts till they were denuded of their scales, and then applied the solution of ethylate of soda to the surfaces.

Dr. Schapringer said he used the hypodermic injection of corrosive sublimate for some time, and had never had abscess following its use, perhaps because he always took the precaution to wipe the needle carefully after charging the syringe, especially at the point, so as to make sure to remove the drop of fluid that may protrude at the muzzle. In giving hypodermic injections, he very often took up a fold of the shirt with a fold of skin, and pierced both with the instrument, thus avoiding the necessity of the entire removal of the clothing, a matter that was of much importance with female patients.

A CONVERSATIONAL meeting of the Society was held at the hall of the Society, Philadelphia, March 22, 1882.

TREATMENT OF CONSUMPTION.

Dr. Hamilton said that in a practice of fifty years he had met but seven or eight cases of tuberculosis which had recovered, and even in some of these he thought the diagnosis was doubtful. In two of the cases, however, the diagnosis was certain, and in these he thought the recovery was due more to the general hygienic and supportive measures than to the medicines used. Whiskey and cod-liver oil were the means he most relied upon to prolong life. He had attended Dr. Joseph Parrish's lectures, and had confidence in his system. He had found exercise in the open air to be the most beneficial agent. A case in illustration was that of a peddler, who, by open-air life, had probably prolonged his existence at least two years beyond that which he would have secured under other conditions. The late Dr. Coates was also a believer in this system. Exercise was beneficial, especially as it increased the appetite, and thus conduced to the taking and digestion of more food, which was a special indication in this wasting disease. No medicines should be given that lessen appetite and impair digestion; yet palliatives may be required. Dr. Parrish had related to his classes the case of a young man who spent six months in active camp-life,—which Dr. Parrish himself thought too severe,—but who returned so improved that the physician did not recognize him. He was apparently nearly well. Pure air and nourishing food were the most useful agents in this usually chronic disease.

Dr. Seiler said that many points in Dr. Woodbury's paper were highly instructive, but some required further development. Dr. Woodbury advises active exercise, but Dr. Seiler's experience was that patients could not take it. He always advised patients to exercise until they *begin* to feel tired. Moderate exercise produces appetite, but very active exercise does not. In reference to fresh air, an open question was, Is night air different from day air in action in these cases? He had found that factory-operatives, who could exercise in the open air only at night, progressed as favorably as those who exercised during the day; but the hour just after sundown was not safe: the lower stratum of air was too moist; and, for the same reason, the sea-shore in summer was not suitable. Cough was a symptom which could not be treated properly unless its source was located. It has been shown that in the respiratory tract there are certain cough-centres,—viz., the inter-arytenoid space, the bifurcation of the trachea, and the posterior tracheal wall. When these points are irritated, cough results; but irritation of lung-tissue itself does not cause cough. The remedies, therefore, should be applied to the laryngeal, bronchial, or tracheal irritation, as the case may be. Dr. Seiler was opposed to opiates and sedatives, and preferred inhalations and counter-irritation. Night-sweats were best treated by sponging the entire skin with whiskey, either with or without addition of alum, night and morning. This treatment always benefited

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and often cured the trouble. Patients should have all the food they can take, and alcohol is indicated because it retards tissue-change. Cod-liver oil is rather a food than a medicine, and may be given with alcohol. It must, however, be of the best quality. Inferior oil causes nausea and eructations. Dr. Seiler had used enemata of desiccated blood, with good results, and in two cases had used it in solution in salt-and-water as an inhalation with the atomizer. These were cases of ulceration of the larynx, with great dysphagia, and the treatment was pursued only until the patient got able to swallow. Feather beds had been condemned by the lecturer, but other beds were no better when not properly ventilated. Feathers were extensively used in Europe, but no special liability to consumption was traced to them. A great point in reference to the general hygiene was to keep dust out of the lungs. This could be very well done by putting a sponge over the nostrils. Much cough would be prevented by this. He thought that the disease was not a dyscrasia, but want of nutrition. Hence, if we give enough food and favorable sanitary conditions, cure is possible.

Dr. Vogler asked for information as to the results obtained by any of the members present in regard to the inhalation of carbolic acid. He had seen a notice of its use based upon the idea that the disease was due to germs. He had used it in one case, previously treated by usual remedies, without much benefit, in which the character of the disease was indicated by the symptoms and by the fact that four members of the family had already died of it. Calvert's A No. 1 (gilt label) carbolic acid was given in solution twice a day by means of the atomizer, about two grains being dissolved in four drachms of distilled or rose-water, and flavored with two or three drops of teaberry oil. The case rapidly improved; cough and night-sweats disappeared. The sanitary surroundings, however, were very good. He had several cases now in the German Hospital under the same treatment, and these were doing well. No irritation seemed to be caused by it.

Dr. Eskridge said he agreed with Dr. Woodbury in most points referred to in his paper, but doubted that many cases of consumption were permanently cured. He had never seen a case that had not ultimately died of some pulmonary trouble. The disease always left, at best, a special susceptibility to lung-troubles. In controlling cough he had used carbolic acid and iodine after the manner recommended by Dr. Coghill, of the Brompton Hospital, London. The following combination was used: creasote and carbolic acid, each ʒi; compound tincture of iodine, ʒii; and alcohol, ʒiss. This he had employed in nearly fifty cases. It is good for almost any variety of the disease, but most effective in the chronic. It diminishes the quantity of expectoration, allays cough, and lessens or entirely destroys the fœtor of breath. It is preferably used in a respirator; an atomizer will not answer so well. A simple respirator may be extemporized by taking a short cylindrical box (mustard-plaster box or one made of stiff paper), with a perforated cap, and a hole in each side about its middle. A piece of absorbent cotton containing ten or fifteen drops of the solution is placed in the box, near the perforated end, and a string or wire is passed through the side-holes to prevent the cotton coming in contact with the mouth. The patient, with his mouth to the free end of the box, is directed to inhale with mouth open, and exhale with mouth shut. The treatment is at first irritating, but, if persisted in, will become soothing and agreeable. This is the only method Dr. Eskridge now uses to allay cough in chronic phthisis, but in the acute variety it does not answer so well. The chest-pains were due to pleuritic inflammation, and were relieved by counter-irritation. He rarely used anodynes. Alcohol was, in his opinion, when the patient is well selected, the sheet-anchor for general treatment. He believed that we could ill afford to dispense with it when there is but little elevation of the body-heat, but it was of little use in the acute disease. In the treatment of night-sweats, he had taken advantage of the fact that the sweating did not begin until the latter part of the night, and by the administration of brandy (ʒi or ʒii) about 2 A.M. had frequently succeeded in preventing the sweating. At times he had added digitalis to the alcohol. Another plan was sponging the body with alcohol and some astringent; but this sometimes failed. For irritable stomach, Fowler's solution, half to one drop three times daily, administered before eating, had given good results. He believed in a predisposition to the disease. All may be susceptible to it, but some become consumptive more easily than others. Doubtless many persons do not get consumption because they are carried off by other diseases. Building up the system is the main object of treatment, and for this iodine, nux vomica, and cinchona are the best medicines.

Dr. Blackwood said he believed more in hygienic than in therapeutic measures in the treatment of consumption. The stomach should be spared rough usage as much as possible. He objected to feather beds because they yielded too easily, and allowed the body to sink in, so as to prevent proper change of air on the surface of the skin; also because feather beds were always very dirty. A woven wire mattress was much better, and where much emaciation existed, a gum blanket covered with a cotton sheet might be used. He had tried static electricity in controlling cough, and also as a means of improving general nutrition,—but in the latter use had no success,—and would like Dr. Woodbury and

others to state their experience with the method. In reference to the advisability of treating anal fistule in consumptives, Dr. Blackwood said he never had any belief in pathological safety-valves. Anal fistule was very depressing, and he always operated for it, and found it to heal well and patients be benefited.

Dr. Benjamin Lee said he agreed with the lecturer that consumption was not specific, but was due to imperfect or depraved nutrition. Scrofulosis or struma was a similar condition. The existence of tubercle in bone had never been demonstrated, and was denied by some of the first pathologists. When miliary tubercle is not present in the lungs, the disease is always simply one of mal-nutrition, and the remedy is appropriate food; but if there is no demand for food, by reason of the failure of assimilation and absorption, it is useless to put it into the stomach. Hence exercise had naturally been suggested as a means of increasing the activity of the absorbents. Active exercise, however, is often depressing, and we must seek some substitute. This we find in massage and passive movements. For night-sweats the Turkish bath is good. It substitutes a healthy day-sweat, which is under control, for an unhealthy, uncontrolled, and very exhausting process. The danger of taking cold need not be feared. The condition of the skin-glands was much improved by it. Inunction, practised after the bath, is a protective against changes of temperature and an aid to nutrition. Dr. Woodbury was right in reference to nutrient suppositories. Dr. Lee had treated a case of obscure nervous disease during the past winter, in which the stomach was quite unable to retain food, and for six weeks life was supported by enemata of yolk of egg, milk, brandy, and beef-tea, when the rectum became so irritable that it would not retain the enemata. Suppositories of gelatin, with Liebig's extract of beef, were used, about five a day for four weeks, by which time the stomach had become more tolerant of food.

Dr. Woodbury, in thanking the gentlemen who had discussed the paper, expressed his gratification at the interest shown in the subject, and also his pleasure in seeing that, instead of discussing vexed questions of pathology, the members had taken the better course and contributed their own observations and experience. He fully agreed with the views expressed by the last speaker, and had referred to the use of massage, inunctions, and bathing, but had been obliged to omit portions in reading, so as not to go over the prescribed time. Petroleum ointment, however, on account of the difficulty of oxidation, he considered of less value than cod-liver oil, cocoanut-oil, or lard-oil. The Turkish bath may be of service, on account of the free diaphoresis which it causes; but it should not be too frequently repeated. The functions of the skin being physiologically identical with those of the lung, and, to a certain extent, supplementary in their action, we may depurate the blood through the skin when the lungs are crippled. This justifies the stress laid in the paper upon the importance of a proper care of the skin in consumption. In reply to Dr. Blackwood, he said that his authority for the statement attributed to Prof. Bartholow, regarding the improvement in nutrition following the use of static electricity, was Dr. Bartholow's book, in which he speaks of several cases of phthisis that were greatly benefited by the electric bath. Referring to the remarks upon alcohol, he regretted that he could not agree with Dr. Eskridge as to its value in phthisis. Nothing in clinical medicine is more certain than that the continued use of alcohol, even in moderate doses, stimulates the development of connective tissue all over the body; nothing in pathology more evident than the fact that alcohol is a prolific cause of pulmonary disease; nothing in toxicology better established than the observation of the action exerted by alcohol upon the respiratory centre. For these reasons it is especially dangerous in pulmonary consumption, as it is adding a respiratory poison to the exhausting effect of the cough and the already increased respirations upon the medulla oblongata. The remarks upon predisposition established nothing but what had been claimed in the paper,—a constitutional weakness with a local expression, or a vulnerability of certain organs and certain tissues in certain persons. He still retained his opinion that the word "predisposition" is commonly employed in connection with the early manifestations of the disease, and therefore, to avoid confusion, he preferred the word "susceptibility" to denote a passive condition of the subject and quite compatible with health. Carbolic-acid inhalations, in fibroid phthisis with bronchial dilatation and fetid expectoration, he had used, with excellent results. Its benefits are due probably as much to the action of the acid as a local anæsthetic as to its other properties in preventing putrefactive changes. Desiccated blood he had not used for enemata, on account of the supposed danger of introducing the ova of parasites or other germs, the blood not being sufficiently heated in its preparation to destroy their vitality. In regard to night air, which is the only air that can be breathed at night, the question is simply between breathing impure air and the purest air attainable at the time. It seems, however, a proper precaution in malarial regions to sleep in the upper rooms of the house, where the windows may be opened without admitting the exhalations from the soil.

DR. S. W. GROSS has resigned from the surgical staff of the Philadelphia Hospital.

NEW YORK COUNTY MEDICAL SOCIETY.

STATED MEETING, JUNE 26, 1882, DR. FREDERICK R. STURGIS, PRESIDENT, in the chair.

THE scientific work of the evening consisted of the presentation of cases of leprosy, with remarks, by H. G. PIFFARD, M.D.

Dr. PIFFARD said he had spoken on this subject before the Society a year ago, and would simply present another case this evening and make a few remarks upon certain points raised by Dr. Emerson and Dr. Fitch, of India.

The patient presented was a Japanese who spoke no English, and the history was therefore imperfect. None of his family, so far as could be learned, had suffered from any skin affection. He lived in Japan until two years ago, when he came to New York and worked as a packer in a Japanese store. He was admitted into Charity Hospital on the 20th of May, this year. He denied syphilis. There was a vague history of gonorrhœa and bubo ten years ago. He had not had connection for ten years. Six months before admission he felt sick; spots appeared on the legs, then on the arms and trunk. These spots came quickly,—which occasionally occurred in leprosy, though not as a rule. Within a week the eruption was fully developed. After being sick a month, he went to the New York Hospital, where the diagnosis of leprosy was made, and he was then sent to Charity Hospital. On May 20, when Dr. Piffard saw him, he was lying in bed suffering from febrile action; the face puffed up, simulating erysipelas. There were certain spots and eruptions on the body, not scaly as at present. The question arose as to whether he was suffering from either syphilis or leprosy pure and simple, or from both diseases. In leprosy one might have eruptions very closely simulating the tubercular eruptions of syphilis; there might be enlargement of the inguinal and other glands, etc.; and it was well known that in the Sandwich Islands, for instance, where leprosy was common, the symptoms present were often so much like those of syphilis that it was difficult to make a differential diagnosis, or to determine whether both affections were not present at the same time. About a year ago Dr. Hanna sent him a patient asking whether he were suffering from syphilis or from leprosy. He was unable to determine whether either of the diseases was present in its simplicity, and the man improved up to a certain point under syphilitic treatment, when he came to a stand-still. He understood that he afterwards improved greatly under treatment for leprosy. It was probable the man had both diseases, as was quite commonly the case in China and elsewhere.

Dr. Fitch claimed that leprosy was simply a fourth stage of syphilis occurring in a race whose ancestors had not been thoroughly inoculated with the syphilitic disease. In the latter class there seemed to be a special exemption from this fourth stage, as was true of nearly all the white people who lived in India, the cases of leprosy there occurring almost altogether in the natives. He believed that the white people obtained this exemption by inoculation of syphilis in their ancestors when it was so common, in Europe, about the fifteenth century.

A large number of the Sandwich Islanders had recent syphilis, and of the many patients presenting themselves at the dispensary to which Dr. Fitch alluded it was seldom that a diagnosis could be made between those who had syphilis and those who had leprosy, for the same lesions characterized both,—the same sore throat, the same deep-seated pain, the same coppery color, tubercular sores, disease of the bones, fissure of the tongue, local anæsthesia, etc. Indeed, as said before, he claimed that the cases of leprosy were only cases of syphilis in a fourth stage. The treatment which was of benefit in syphilis, he claimed, was the only thing which proved of benefit in leprosy. Both were alike incurable, and both alike amenable to treatment.

Bearing upon these ideas entertained by Dr. Fitch, Dr. Emerson had asked him certain questions, which he would answer in order, as follows:

1. Do you find any cases of leprosy occurring absolutely without previous leprous intimacy, or under such circumstances as forbids your thinking it came through such intimacy? A. I do not know just what he means by "intimacy." I have hinted that the disease in the majority of cases is not contagious by simple contact, but that it is probably propagated by the blood or some leprous secretions gaining access into the blood-vessels or the tissues of the healthy person. There is very little doubt but that leprosy has been propagated by inoculation and by sexual intercourse, and that it is hereditary, but there seems to be great doubt as to whether it can be contracted simply by being near a person, or even by handling. During the past twenty years there have been a good many cases of leprosy in New York, some being in the hospitals for periods covering months or years, but there is yet to be found a single case of leprosy developed in this city or its neighborhood, although these lepers were in contact with a large number of natives. I know of but two cases of leprosy developing in this city at all,—this case being one, and the other being the patient I showed last year. Both of these had lived in countries where leprosy is common, one in Japan and the other in Mexico. As to whether any cases of leprosy occur without any previous leprous intimacy, I would say that I have never seen but one case where there appeared to have been no sort of connection or contact or intimacy with

any other. That was the case presented by Dr. H. D. Bulkley at the meeting of the Dermatological Society about fifteen years ago. The patient was a native of New York State, and had never been out of the State; had never been anywhere where leprosy prevails, and, as far as was known, never had any contact with a leper. The case was pronounced to be one of leprosy by the highest authority.

2. Have you or have you not found any lepers who have not had any previous history of syphilis? In reply to this question, I would say that in none of the cases of leprosy which I have seen could a history of syphilis be clearly made out.

3. Do you find cases of leprosy occurring in patients previously syphilitic under such circumstances as lead you to believe that leprosy comes from syphilis? That can be answered, as far as my own experience goes, in the negative.

4. Do you find any cases or facts that lead you to think syphilis may change into leprosy? A. I have never seen any cases that would lead me to think so.

5. Does not the pathology of leprosy differ widely from that of syphilis,—I mean the microscopical pathology? A. There is no question at all but that it does. The lesions of leprosy are chiefly in the skin and nervous system. If you examine the leprous tubercles you will find proliferation of connective-tissue corpuscles, and the organization of these proliferated cells lengthening out and forming fibres, as found in quite a number of examinations. Very recently it has been claimed that bacilli have been found in these tubercles, but there is doubt about that. The distinctive microscopic feature of leprosy is found in the nerves going to the extremities and in the cord. There is proliferation of the connective-tissue corpuscles resulting in swelling of the nerve, as of the ulnar nerve, which is quite large in this man. Afterwards there is a shrinking or sclerosis of the tissues, and the nerve becomes much smaller than normal.

It seems to me, therefore, that Dr. Fitch is unquestionably wrong with regard to the connection between leprosy and syphilis. The fact that a large majority of natives where he is have syphilis, and that probably as many as ten per cent. have leprosy, would account for his finding but few with the latter disease who had not also a history of syphilis, and for his claiming a connection between the two affections.

Another point which Dr. PIFFARD considered an important one was the question of providing means of isolating persons with leprosy in this country from healthy persons; for, as it had done in other countries when it once got a foothold, it was likely rapidly to spread. He had seen as many Europeans with the disease in the United States as those who were born in countries where it was specially prevalent.

DISCUSSION.

Dr. JACOBI remarked that since there appeared to be no reason for supposing leprosy to be contagious, he did not understand why these patients should be isolated. On the contrary, he thought they should be allowed perfect liberty to go about, that other physicians also might see examples of a disease which is so rare in this country.

Dr. PIFFARD remarked that while leprosy might not be spoken of as strictly contagious, the same was true of syphilis; yet if all persons with syphilis were isolated, doubtless there would be fewer cases of that disease. He supposed leprosy was propagated in a somewhat similar manner to syphilis.

Dr. JACOBI added that Dr. Piffard himself had admitted that all the cases of leprosy which he had seen in this country, excepting one, had come from places where leprosy was known to prevail, and in not a single instance did he know of the disease having been propagated to one of our inhabitants. He could not see, therefore, any necessity for isolation. Moreover, to advocate isolation was theoretically to sustain the idea of contagion by communication or some means, which ought first rather to be proven by facts.

Dr. RAWSON referred to a case in Bellevue Hospital as long ago as 1829. The whole body of that patient was covered with dry and pretty large scales.

Dr. CARPENTER quoted the history of a case by Dr. Low, characterized by dry scales.

Dr. PIFFARD said the elephantiasis of the old Greeks corresponded to the leprosy of the present day, and to this particular case; that the term lepra, as employed at that day, corresponded to the psoriasis of the present day, and to the so-called leprosy of the New Testament. To this class the case quoted by Dr. Carpenter, and others that had been mentioned, probably belonged. The English translators had made a mistake in calling the disease referred to in the New Testament leprosy. It was lepra. Leprosy was referred to in the Old Testament.

Dr. CARPENTER remarked that Dr. Low spoke of this case as one of lepra.

In reply to a question, Dr. PIFFARD said the average length of life of patients suffering from leprosy was supposed to be ten or twelve years, while psoriasis was not known to shorten life.

Dr. DOUGLASS remembered, many years ago, to have seen lepra transmitted from parents to several of their children.

The President said he had seen many of the cases to which Dr. Piffard had referred, and others, and he would say a word with regard to the differential diagnosis between leprosy and syphilis. In the first place, leprosy, like syphilis, attacked, he believed, all the tissues of the body. There was a gross resemblance between leprosy and syphilis in so far as the eruption on the skin went. In

both there was a macular form of skin disease; but in leprosy the macules covered a broader surface, and were generally preceded by such an amount of fever as was never seen in a syphilitic eruption. He believed that the many cases called erysipelas occurring with leprosy were nothing more than true leprous fever. In one case, after the macular eruption, and before a second crop of tubercles came out, the temperature rose to 105° F. and the face became enormously swollen. It appeared as though erysipelas had invaded the face and upper portion of the chest. It soon disappeared under treatment, when the macules, and then a fresh crop of tubercles, came out. There might or might not be enlargement of the lymphatic glands. The ulnar nerve, as Dr. Piffard had said, became enlarged. The cartilages of the nose, ears, etc., became thickened, and connected with anæsthesia, which might also be present before the macules made their appearance, being more pronounced, however, as the disease passed on to the tubercular stage. There might also be an iritis. The tubercles had no tendency to break down, as they often had in syphilis. The anæsthesia increased, the hands, fingers, and toes began to swell, and dry necrosis occurred. The mucous membranes became invaded with tubercles, the voice might become hoarse and husky, the fingers might drop off without hemorrhage or apparent violence. He doubted whether the eruption in leprosy ever became scaly; and those cases in which the scales were abundant should not be considered cases of this disease.

As to the question of isolation on the grounds of possibility of contagion, that was a mooted point; but where leprosy prevailed, isolation or hospitals for patients so afflicted were necessary, if for no other reason than to support the many who became utterly incapable of doing anything for themselves.

With regard to treatment, he did not remember to have seen any good effect from the use of iodide of potassium. Arsenic was tried, with negative results. Various other remedies were tried, with negative results. In one case in which Chaulmoogra oil was tried, it seemed to be of decided benefit. Dr. Piffard seemed to obtain marked results from a drug the active principle of which was strychnia.

With regard to the etiology of leprosy, Dr. PIFFARD quoted Dr. Emerson to the effect that it did not occur sporadically, but among families or groups of people.

Dr. JACOBI said he was willing to admit the facts, but he was not willing to accept them as evidence of the contagious nature of the disease; for we knew that malarial and other affections occurred often endemically, or as affecting several persons in a family or neighborhood, rather than here and there an individual; yet they were not diseases of a contagious nature.

The Society adjourned until the fourth Monday in September.

REVIEWS AND BOOK NOTICES.

A CLINICAL HAND-BOOK ON THE DISEASES OF WOMEN. By W. SYMINGTON BROWN, M.D. New York, William Wood & Co., 1882.

This book, the preface tells us, does not claim to be a treatise. It omits many recondite aspects of disease, but is a practical guide for the use of students and country practitioners,—heaven help them! An effort has been made "to concentrate the best that has been written on each subject, including the old masters;" so that we take it to be a sort of picture-gallery, so to speak, though none of the old masters' names are appended to the illustrations, and the reader is obliged to use his own art knowledge and furbish up his reminiscences of European galleries before he can decide whether, for instance, Fig. 2—"Genital organs, perpendicular view"—is the work of Perugino or Cimabue; though a novice can see the hand of Michael Angelo in the spirited study of sponge tents, p. 117. Cutter's retroversion pessary dates back probably to some obscure master in the twelfth or thirteenth century, while the life-like drawing of Cusco's speculum, p. 35, is taken from Bewick's "British Birds." P. 106 shows a very remarkable picture, resembling nothing now existing on earth, and entitled "After Schroeder." There was some historical worthy who said the deluge came after him; but this thing is worse—for Schroeder.

The author has written a readable book, sound on most topics, conservative, not overflowing in originality. He is evidently a believer in inflammation of the cervix. He thinks that there is true inflammation of the cervix, because chlorides accumulate in its tissue. This is proved by touching it with the solid stick: "a dense white precipitate is formed immediately." In pneumonia there is inflammation; chlorides accumulate in the lung-tissue; they are absent from the urine: *ergo*, where we find chlorides in the cervix, whether the urine contains theine or not, the analogy is perfect, and the cervix is inflamed. By touching his own tongue with the solid stick, the author would produce the same dense precipitate,—perhaps more dense,—and the analogy would hold equally good. The reader may try it.

The author highly recommends Dr. Cutter's pessary for retroversion, giving the inventor's account of it, and its means of application. In anteversion he uses local depletion, incises the external os, if small, and uses the hot douche twice a day. Of pessaries, he prefers Thomas's anteversion, with Playfair's

modification, or Cutter's loop pessary; abdominal supporters, and, as a last resort, the excision of a triangular piece of mucous membrane in front of the cervix.

The chapters on uterine and ovarian tumors and ovariotomy (Battey's operation) are brief compared with the space they occupy in most works of this character. For terse and vigorous English we refer the reader to the author's remarks (p. 146) on the treatment of puerperal fever. It is condensed to half a page. Bleeding to faintness, if seen before four hours have elapsed; after that bleeding is doubtful practice. Opium in large doses; four-drop doses of verat. viride every hour till the pulse is slowed. "If the opium is vomited, inject a *saturated* solution of morphia with the hypodermic syringe." The quantity of the saturated solution used is evidently unimportant. After the first day, quinine, ten-grain doses, night and morning. Draw off water every four hours. The one case cited in illustration died. The solution of morphia probably was not saturated. Of puerperal convulsions the author says, "Albuminuria is not always present before convulsions, and is often present when none occur,"—a statement which seems to us to embrace the facts of the case. It is quite possible that the albumen is a probable, but by no means necessary, accompaniment of the morbific agent in these cases; and when we consider that uterine convulsions are by no means proved to be the result of the retention of urea, there is room for further discovery. The author bleeds early, gives an active cathartic,—elaterium, one-quarter grain to a teaspoonful of sulphur,—repeated, if inactive, in half an hour; if a hearty meal has been taken, a zinc emetic, and uses the catheter, though whether he uses it to tickle the fauces or in the ordinary way he leaves us in doubt. Chloroform inhalations to arrest the convulsions, and the early induction of labor should they still recur. In convulsions after delivery, small but frequently-repeated hypodermics of morphia and hydrocyanic acid by the mouth, with a poultice of digitalis leaves to the lumbar regions when urine is scanty. Chloral hydrate and jaborandi are also mentioned.

The author's treatment of cystitis would have been more full had he added belladonna, iron, benzoic acid, and cantharides, four useful remedies, to his list, a trial of which might, in many cases, prevent a resort to what he evidently considers the true treatment,—viz., the formation of an artificial vesico-vaginal fistula. The idea that piles are often caused "by the use of cheap newspapers after defecation" will call down upon him the maledictions of the penny press.

Under the head of anal fissure we find one illustrative case. The patient is described as a "lady of more than average intelligence." This probably hints at some observations of the author, not yet published, which will go far to prove that the victims of anal fissure are, as a rule, deficient in intellect. In the final chapter on sterility and hysteria we find Dr. Ellwood Smith (!), of Philadelphia, quoted as recommending "rapid dilatation, by means of a two-bladed dilator, of which he uses three sizes." The synthetical Boston mind will insist on blending the names which, separately, have long enjoyed a more than local reputation. To the elevated observer at the Hub the two seem but one,—especially before dinner. E. W. W.

HOME AND CLIMATIC TREATMENT OF PULMONARY CONSUMPTION, ON THE BASIS OF MODERN DOCTRINES. By J. HILGARD TYNDALE, M.D. New York, Bermingham & Co., 1260 and 1262 Broadway, 1882.

Pathology, general treatment, home treatment, climatic treatment, embrace the outlines of this book. It will be found, though unpretending in appearance, to contain a great store of valuable information, well arranged and pleasantly and forcibly presented. Every known method of treatment is discussed dispassionately and fairly, with the author's comments.

Climatic treatment is based upon an exhaustive, if condensed, review of the various mundane climates, their moisture, dryness, elevation, prevailing winds, range of temperature, and purity of air; and the attempt to base the recommendation of change of climate on fixed data and an intelligent judgment seems to us thorough and successful. After assimilating this work, the practitioner will not be so ready to send his patients haphazard to Florida or Colorado, to the shore or the mountains. We believe that in the main, and except where led away by the views of distinguished men abroad, whose views are not always applicable on this side the water, the author has furnished us with the material facts on which to form a right opinion in any given case as to what climate will be most beneficial. We do not agree with his view of the method by which mountain-air works its cures, and we miss any account of the probable after-effect to be looked for when an apparent "cure" seeks to resume home-life with its climatic difficulties. In short, it is a question whether we should not, in many cases, look beyond the hoped-for result to the chances of permanently retaining improvement. If we hesitate between recommending mountain-air or the air of the seashore, should we not ask, in incipient cases, whether, apparent cure being effected, return from the shore or the mountain will be most apt to be followed by dangerous depression and rapid or slow relapse? Colorado, with all the wonders it has wrought, has seldom as yet enabled its cures to resume residence safely in the Eastern and Middle States; while the pines and shore and long sea-voyages, if successful, seem to fit their successes better for

enduring a return to every-day life or work. The time spent, however, in a careful reading of Dr. Tyndale's book will go far towards helping us to a personal solution of the many questions involved in the treatment of consumption. E. W. W.

MARRIAGE AND PARENTAGE, AND THE SANITARY AND PHYSIOLOGICAL LAWS FOR THE PRODUCTION OF CHILDREN OF FINER HEALTH AND GREATER ABILITY. By a Physician and Sanitarian. New York, M. L. Holbrook & Co., 1882.

While civilization is lamenting the increasing disinclination on the part of its young men to enter upon the married state, at this very time there is thrust upon the world another hindrance to matrimony, in the shape of "Marriage and Parentage." As the good Brahmin, who held life sacred, preferred to die of thirst after viewing his ditch-water through a microscope, so will our youth, after perusing such works, prefer life single rather than the entailing of such numberless ills as the author describes on their innocent children, rather than begin even the search for a partner who will come up to the requisite standard of health and other qualifications enumerated by the "physician and sanitarian."

These books are written to catch the prurient eye by their title; but the subject-matter is not calculated to do much harm. The facts are old, the argument trite, the science cheap. We have read somewhere before about the effects of tobacco on French students, and that old men should not marry young women. We have read about the Zulu marriage customs and the Spartan laws. We know how wonderfully the Grecian race developed. But, alas for the "physician and sanitarian," it is not cheap science but "love that makes the world go round," and "money that makes the mare go," and the two influences combined will outweigh the efforts of a thousand advocates of sanitary marriage.

The author hopes that ere long, before entering the married state, the youth of both sexes will consult the wise sanitarian; but we fear it will be long before the wise sanitarian develops that line of business into a pecuniary success. The license-clerk, the justice of the peace, the clergyman, are a long way ahead of him yet.

The physician and sanitarian would, if he had his way, improve humanity by breeding, as stock is improved. The breeders of men would take an ideal standard and breed up to it. He gives the rules of the best breeders, and would apply them to us if he could. He would take two brothers, and kill and eat one, if breeding, for instance, for the King of the Cannibal Islands. If the brother proved succulent and tasty, if he seemed tender and full of juice, he would breed from the remaining brother; but if he proved tough and dry he would eat this brother too on some day when his larder was empty and his teeth sharp.

But one man's ideal standard may differ from another, even as the Apollo Belvedere differs from—well, the statue of Washington in front of Independence Hall. The breeder's standard might be false. He might breed short-legged people "till their bellies trailed on the ground," or hook-nosed people, or people with long ears, like his own ancestral ones. All these failing, the enthusiastic sanitarian might try raising from slips and cuttings. In short, the flood-gates of outrage would be opened on poor humanity, and the laws of natural selection—a different and much better thing—be utterly abrogated.

E. W. W.

GLEANINGS FROM EXCHANGES.

POISONING BY ACONITIA.—An individual, after taking dinner, swallowed, with suicidal intent, about eight grains of Merck's aconitine, which produced a fatal result after twelve hours' suffering. The case is reported in the *Medical Press and Circular* (May 24) by Dr. F. Springmühl, who saw him half an hour after taking the poison, when the first symptom appeared, and who describes it graphically as follows:

"S—— had dined before swallowing the poison, which fact caused its action to be considerably retarded and his sufferings prolonged. A burning sensation in the throat and mouth first made itself felt, and this became more intense with every minute; intense pains in the stomach ensued after thirty minutes, and these became so violent in a few seconds that the patient writhed, shrieking, in the most dreadful convulsions, and trying to strike the wall with his head. With difficulty he was held, and emulsive drinks, as milk and oil, given him. Very soon he became nearly incapable of swallowing, and seized with spasmodic coughing and wanting to vomit. In spite of emetics, he could not vomit until an hour after the taking of the poison, and then with violent exertion a dark-greenish fluid was vomited, and the patient felt no relief to the pains in the stomach, and the burning in the throat, which rendered the swallowing and the application of antidotes very difficult. Neither did the stomach-pump (used immediately) give any relief; and, although exhaustion ensued after violent convulsions, the symptoms reappeared with renewed force in spite of all applied remedies. In the commencement of the third hour the pains and convulsions attained such violence that death was expected every instant; but this did not ensue till many hours afterwards.

"In the fourth hour, after repeated injec-

tions of morphia, the patient seemed somewhat better. Previous to this he made us understand that his skin was frightfully irritated. This irritation of the skin, as of ants crawling, continued apparently the whole time, and whenever the intensity of the pains somewhat relaxed he scratched the skin of his head and naked breast in a convulsive manner until perfectly sore. His eyes glared wildly about, sometimes resting with a fixed stare on one point. The convulsions were repeated at almost regular intervals, and the inclination to vomit continued, although vomiting did not follow after the second hour. At intervals of about forty minutes the patient seemed to lose consciousness, but only for several minutes, whereupon the convulsions and the other symptoms appeared with undiminished violence. Three hours after the appearance of the first symptoms he became incapable of uttering intelligible words, but made us understand that he felt a giddiness, and a little later he appeared to have lost his sight. He threw himself wildly about on the couch, and screamed and groaned so frightfully that I have never heard anything to equal it. Thereupon exhaustion and apparent coma, and then renewed attacks of the most violent description. All attempts to give relief were in vain. Then a difficulty of breathing set in, and he appeared to suffocate. At intervals he was conscious, and when asked where he felt pain he made rapid motions to his head and stomach alternately, and wanted to drink, although he could not swallow. His pulse and temperature fell considerably, and before death thorough exhaustion and unconsciousness set in, cold perspiration covered his whole body, and death-like pallor before the end, which was syncoptic, while all the time asphyxetic death had been expected.

"The post-mortem examination of the body gave no results which were not known before. The pupils of the eyes were much dilated, the interior of the mouth was very pale, the brain congested, as well as the lungs. The valves of the heart were very flaccid. Congestion was observed in the liver and kidneys, an inflammation of the stomach was apparent, and the mucous membrane congested. The alkaloid was found by chemical analysis in the contents of the stomach; it was not found in the urine of the deceased."

In commenting upon this case, Dr. Springmühl again calls attention to the great difference in strength and in physiological action between the various forms of aconitine in the market, and states that a doctor who would in England give a patient aconitine according to German or American prescriptions must necessarily cause his death. The English (Morson's) aconitine is remarkable for its particularly poisonous action upon the human system, and the author concludes that it must contain some other poisonous principle not found in either the German or the French preparation.

Etiology of Tuberculosis.—Koch has apparently succeeded at last not only in recognizing the tubercular virus, but in cultivating it artificially. To the bacteria which form the *materies morbi* he gives the name of tubercle-bacteria. They are distinguished from other bacteria by the blue color which they retain after staining in methylene blue along with caustic potash, and subsequent treatment with vesuvin. The tissues in all bacteria, except the tubercle-bacteria, are rendered brown by the vesuvin; but it does not alter the color of the tubercle-bacteria. Tubercle-bacteria are rod-like, and therefore belong to the group of bacilli. They are very thin, and their length is from one-fourth to one-half the diameter of a red blood-corpuscle. They resemble lepra-bacilli, but the latter are thinner, more pointed, and take up coloring-matter when treated by Weigert's method, which the tubercle-bacilli do not. Tubercle-bacilli are found in great quantities wherever the tubercular process is commencing or progressing rapidly. They generally form thickly-crowded and often bundle-like groups, which frequently lie in the interior of cells. Numerous free bacilli are also to be found, and especially at the edge of caseous foci they occur in crowds not enclosed within cells. As one recedes from the most active focus, the bacilli diminish in number. Where giant cells occur (*vide* Hamilton, *Practitioner*, July, 1880, p. 6) the tubercle-bacilli are chiefly found within them. Some giant cells are free from them, but the author considers that these are old cells in which the bacilli are either dead or have passed into the resting state. As Weiss, Friedländer, and Laulamié have observed that giant cells grow round foreign bodies, such as vegetable fibres and strongylus ova, one may conclude from analogy that the tubercle-bacilli, being enclosed by the cells, have acted as foreign bodies and have caused the cells to develop into giant cells. The author considers that the organisms noticed by Schüller, Klebs, and Aufrecht were not tubercle-bacilli. From numerous observations he concludes that tubercle-bacilli, distinguished by the peculiar characters he has described, occur in all tubercular affections of men or animals. In order to show, however, that the tubercle-bacilli do not merely accompany, but actually cause, the tubercular process, the author cultivates them in ox- or sheep-serum sterilized by intermittent exposure to a temperature of 58° C. for an hour each day during six days, and finally coagulated by a temperature of 65° C. The bacilli are kept at a temperature of 37° to 38° C. They grow very slowly, so that their growth only becomes evident to the naked eye at the end of a week or ten days. In order to obtain them pure, a second crop must be cultivated by putting some of the first crop into fresh serum after

ten or fourteen days. When the tubercle-bacilli thus cultivated were inoculated into a guinea-pig with every necessary precaution, the result was always the same. On the day after inoculation the slight wound on the belly near the inguinal glands was closed, and remained unchanged till about the eighth day, when a little tubercle formed, which either enlarged without breaking, or, what was more generally the case, was converted into a dry, flat ulcer. In two weeks the inguinal glands on the inoculated side, and sometimes also the axillary glands, were swollen to the size of peas. The animals then became rapidly emaciated, and either died in four to six weeks or were killed in order to exclude any fallacy from the after-development of tubercle spontaneously. Other experiments made by the author show that cultivated tubercle-bacilli either inoculated into the cellular tissue, or injected into the peritoneal cavity or anterior chamber of the eye, or directly into the circulation, produced tubercle without exception. Inoculation into the anterior chamber of the eye produced tubercular iritis (see *Practitioner* for August, 1881, p. 87). The author regards the presence of tubercle-bacteria as the only means of deciding whether any condition is tuberculous or not. His observations show that, according to this test, miliary tubercle, caseous pneumonia, caseous bronchitis, intestinal and glandular tuberculosis, "Perlsucht" in oxen, and spontaneous or inoculated tuberculosis in animals, are all identical. He has not come to any conclusions as yet regarding scrofulous and fungous affections of joints. The discovery of tubercle-bacilli in a pig and fowl renders it probable that tuberculosis is much commoner among domestic animals than is usually supposed. From experiments which the author made in order to discover whence the tubercle-bacilli come and how they get into the organism, he found that they only grow between 36° and 41° C., and therefore in moderate climates can only grow within the animal body, as there only can they have a continuous regular temperature of over 30° C. for at least two weeks. Most of the tubercle-bacilli are probably inhaled in the form of dust. Phthisical sputum contains them in large numbers, and they retain their virulence, when dried, for weeks. Phthisical sputa when dried and converted into dust may produce tuberculosis: they ought therefore to be carefully disinfected. They do not produce tubercle in every case when they are inhaled, probably because, unlike the anthrax bacillus, they grow very slowly. Thus, when introduced into a cut on the skin, as during the post-mortem examination of a phthisical patient, they have no effect, because they are expelled before they can get established; and the same is probably the case when they enter the lungs, unless a nidus is afforded by stagnating secretion, or mucous membrane which has lost its epithelium, etc. In order to prevent the spread of phthisis, the sputa of patients should be carefully disinfected, as well as the clothes, bed, etc., which they use. Another source of infection is tuberculosis among domestic animals, and the flesh and milk of animals suffering from it ought to be shunned.—*The Practitioner: Separat-Abdr. aus der Berl. Klin. Wochenschrift.*

THE CURE OF EPILEPSY BY LIGATURE OF THE VERTEBRAL ARTERIES.—Dr. William Alexander reports, in the *Medical Times and Gazette*, five cases of epilepsy greatly improved by tying one or both vertebral arteries, and states that the three cases previously reported (*ibid.*, November 19, 1881) have remained free from fits from that time. As all of the cases were nearly or quite idiotic, and confirmed epileptics, the results are no less astonishing than gratifying. The operation is performed by making a linear incision outside of the sterno-mastoid muscle, and outside of the veins which converge to the lower third of the outer border of that muscle. The subcutaneous tissues are next cautiously divided, until the finger can be inserted into the loose fatty tissue that lies inside of the scalenus anticus muscle. Upon retracting the sterno-mastoid, with the subcutaneous veins and the internal jugular vein, towards the middle line, the sulcus, towards which the vertebral artery runs, is exposed, when a little scratching with a director will expose the vessel, the ligation of which is then a matter of routine.

A curious physiological fact was noticed. When the vessel is ligatured, the pupil on that side becomes contracted, and in the majority of cases it remains so. Tying the opposite vertebral, the opposite pupil contracts, and the pupils again become equal. The effect upon the mental condition of the patient is good, both directly and indirectly, and the intelligence is decidedly improved. Dr. Alexander has tried this operation in hereditary cases, and in epilepsy following scarlet fever, blows, fright, and in cases where no cause could be ascertained. In all the effect was beneficial and mostly curative, so far as time permits him to judge. Further observation may establish this as the best method of treatment of confirmed and otherwise hopeless epileptics.

RUPTURE OF THE HEPATIC DUCT.—An interesting case of vomiting followed by fatal collapse, in which the autopsy showed rupture of the hepatic duct, is reported in the *Lancet* (May 6, 1882) by Mr. John Freeland, of Antigua. The patient was a black woman, 65 years of age, who had been suffering with intermittent fever, with gastric disturbance, and retching. In one of the vomiting-spells she experienced great pain, which, being relieved by an opiate, soon returned, and was attended by a tympanitic and tender abdomen. After death, which occurred in collapse about eight hours later, the cavity of the abdomen was found literally filled with blood and bile, the

intestines inflamed and gangrenous in spots, and general peritonitis. The gall-bladder was found empty; the hepatic duct was lacerated, and in places contained pouches in which gall-stones were encysted. One of these bags was pervious, and permitted a leakage of bile into the peritoneal cavity, except when obstructed by a gall-stone which it held. This opening had probably existed for years. The former one was surrounded by evidences of recent inflammation, and without doubt caused the fatal result. The spleen was deeply stained with bile; the other viscera did not show such decided coloration.

POMPEIAN SURGICAL INSTRUMENTS.—In the Museum at Naples are preserved a number of instruments, the uses of which are clearly recognized. They were all taken together from one house. Among them is a pair of forceps, supposed to be used for obstetric forceps; but, according to M. Jonin (*Revue Médicale*), they are more properly surgical. A tube for vaginal injections, the end being perforated by two rows of openings, as well as by a terminal one, very strongly suggests the modern form. There is also a trivalve vaginal speculum, and a bivalve rectal speculum, opened and closed by a screw, and catheters of silver, both male and female. Particular interest attaches to an instrument consisting of an iron rod having a small terminal plate (angle, 135°), which, as suggested by M. Jonin in an article in the *Revue Médicale*, may have been used as a laryngoscope, or at least, acting upon the same principle, for the exploration of deep cavities. Among the instruments are a metallic trocar in two pieces, similar to those in use at the present day, bistouries, very large lancets, various forms of stylets, curved and straight, some probably intended for the examination of carious teeth. There are also curette spatulas, small forceps, and various needles and hooks, and surgical cases with instruments, and cases for pills and ointments, etc.—*Lancet*, April 15, 1882.

THE PATHOLOGY OF LUPUS.—Dr. E. S. Shurley, of Detroit, read a paper before the last meeting of the American Laryngological Association entitled "Lupoid Ulceration of the Nasal Septum," in which the pathology and treatment of lupus were considered with especial reference to its appearance in this locality. The paper was based upon the study of four cases of ulceration, more or less destructive, of the nasal septum, one of which was accompanied with veritable lupus of the skin, while the others were not. The clinical history, carefully obtained, showed in neither case a syphilitic taint. The conclusions summed up by the writer were,—that lupus, when its pathogeny and pathology become more thoroughly studied, will probably be considered a scrofulous manifestation; that lupoid ulceration often simulates syphilitic ulceration so closely as to be with great difficulty differentiated; that lupus will sometimes occur in the nasal mucous membrane primarily, and without any invasion of the skin; that the general healthy condition of the patient is not necessarily affected by such ulceration, even when quite extensive; that such ulceration does not depend upon any form of syphilitic poison for its progress, and that its cure or arrest may generally be brought about by those plans of treatment, both local and constitutional, known as antiscrofulitic. In the management, special attention was called to the use of iodoform and thymol, together with cleansing solutions for topical treatment, and the administration of iodine or its preparations internally.

LEPROSY TREATED BY EUCALYPTUS.—A case is reported (in the *Lancet* of May 6), by Dr. Stevenson, of Cape Town, of a woman aged 48, suffering with leprosy of about three months' duration, and general in its distribution. Over the arms and legs were a number of tuberculated anæsthetic patches, and the face had the characteristic leonine appearance. Chaulmoogra oil disagreed with the stomach, and tincture of eucalyptus was substituted in half-ounce doses. It produced diaphoresis, and increased the functions of the skin. One year after the disease began, the improvement was permanent. A few faint spots were sometimes seen on her face when heated: these are the sole remnants of the disease. She had also gained in strength and in weight.

MISCELLANY.

SNAKE-POISON TREATED SUCCESSFULLY WITH LIQUOR POTASSÆ.—Retired Deputy Surgeon-General John Shortt, of the Madras army, having had considerable experience in treating snake-bites, and after some experiments with snake-poison, declares that liquor potassæ is the antidote to snake-poisoning, and reports several cases in which it was used successfully. This is combined with brandy, and local treatment by scarification and ligature is not neglected. Alkaline baths are used in severe cases.—*Lancet*, May 6, 1882.

ABSORPTION OF IODOFORM FROM SURGICAL DRESSINGS.—Dr. Mosetig-Moorhoff (Vienna), who introduced iodoform into surgical practice, says that he always finds iodine in the urine voided after the application of the iodoform dressing. He believes that free iodine is formed in the blood, which enters into combination with the alkalies present, and is then eliminated by the kidneys. On account of its easy absorption, it should not be combined with carbolic acid, or phenyl-poisoning may rapidly follow.—*Centralblatt für Chirurgie.*

SOAP-PAPER.—Dr. Addinell Hewson presented before the Medical Society of the State of Pennsylvania, at its last meeting,

some specimens of paper, tissue or manila, which had been saturated with a solution of soap, and dried. Pieces about the size of a visiting card contain enough soap for shaving or for washing the hands. The superior cleanliness of this method of using soap, especially in hospitals, hotels, etc., is evident, and the proposer also insists that it saves soap. For preparing the paper, a strong watery solution of English glycerine soap is used, in which the paper is immersed; after drying it is cut into pieces of suitable size, and dispensed in a package or a box.

DEATH FROM CHLORATE OF POTASSIUM POISONING.—A patient who had taken a considerable quantity of chlorate of potassium, the exact amount of which could not be ascertained, was found suffering with oppression in breathing, tremor, restlessness, gastric pain, frequent vomiting, and diarrhœa. The urine was dark red in color, diminished in quantity, and contained a large amount of albumen, with blood-casts, disintegrated blood-corpuscles, and renal epithelium, and some granular detritus. The patient lived for a week, vomiting from time to time, and with increasing asthenia. No autopsy was obtained by the attendant, Dr. Lingen, who reports the case (in the *St. Petersburger Med. Wochens.*, March 6, 1882), but he refers to the reported cases in which the blood was of a chocolate color, and the kidneys intensely congested, the tubules containing blood-casts.

A GOOD EXAMPLE.—It has been announced that the Cincinnati Academy of Medicine will present a gold medal to the member who contributes the most valuable paper during the year. This is a most commendable example, and should be followed by other societies that wish to increase the interest and value of their proceedings. The same reward offered for a prize essay would bring out but one or two good articles, but the competition excited by this plan will increase the standard of all the papers presented for discussion, and will react to the advantage of every member.

A NURSE-REGISTRY BUREAU is about organizing in Cincinnati. The success of the institution in Philadelphia may encourage other cities to follow the example, as it has more than fulfilled the expectation of its originators.

THE AMERICAN DERMATOLOGICAL ASSOCIATION will hold its next annual session at Newport, at the Ocean House, on August 30 and 31 and September 1. A good programme is promised.

NOTES AND QUERIES.

CARD FROM PROF. JOHN J. REESE.

TO THE EDITOR OF THE MEDICAL TIMES:

DEAR SIR,—I beg to avail myself of your columns to correct an error in connection with the reports in last week's daily papers of an autopsy made by myself and Dr. Cadwallader, acting coroner's physician, of a woman supposed to have been drowned in the river Delaware. The reporters of the case, in their desire to render it as graphic as possible, have put *their own* interpretation upon the results of this autopsy, whilst making it appear to the reader that they are expressing *my* views; and, inasmuch as these inferences do not seem to me to be fully warranted by a single isolated case, especially when there was no absolute proof that the death was *caused* by drowning, I do not wish to be considered as endorsing the rather premature conclusions attributed to me by these well-meaning but over-zealous reporters.

Certainly, the leading authorities all teach that the presence of water in the lungs and stomach (especially the former) constitutes the most reliable evidence of death from drowning; and the entire absence of water from both lungs and stomach in the autopsy referred to was undoubtedly a very noticeable feature, *provided* we were certain that drowning was the real cause of death, which we were not, as the case was one of a multitude of similar ones, on which the coroner's jury pronounces the stereotyped verdict of "found drowned."

It is evidently a very important point for the legal physician to settle,—What are the positive, unequivocal signs of death by drowning? It may, in truth, become the *vital* point to establish in a capital case, as would appear to be the fact in the now-pending Malley case. But in order to establish an important scientific truth, the experiments should be repeated under varied circumstances until every doubt is removed. I may be permitted to say in this connection that I am now engaged in investigating the post-mortem appearances in cases of death from drowning, as a legitimate object of inquiry connected with medical jurisprudence; but I had not the remotest idea that the results of the late autopsy, which was conducted with the strictest privacy, and which was only part of a series of observations of a similar character, would have fallen under the ken of the ubiquitous "reporter," and been made to assume a coloring not designed by myself. Very respectfully yours,

JOHN J. REESE, M.D.

316 S. TWENTY-FIRST ST., June 26, 1882.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM JUNE 25 TO JULY 8, 1882.

By direction of the Secretary of War, the Medical Examining Board, convened in New York City by S. O. No. 223, October 30, 1877, from A. G. O., is dissolved, to take effect June 30, 1882, and the following-named officers, now members of the Board, will report by letter to the Surgeon-General:

MAJOR JOSEPH B. BROWN, Surgeon.
MAJOR JOSEPH H. BILL, Surgeon.
MAJOR CHARLES H. ALDEN, Surgeon.

S. O. 147, A. G. O., June 26, 1882.

HEAD, JOHN F., LIEUTENANT-COLONEL AND SURGEON.—Granted leave of absence for fifteen days. S. O. 153, A. G. O., July 3, 1882.

DE LOFFRE, A. A., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from further duty at Fort Wallace, Kansas, and assigned to duty at Fort Sill, Indian Territory. S. O. 124, Department of the Missouri, June 21, 1882.

GARDNER, E. F., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from duty at Vancouver Barracks, W.T., and assigned to duty as post-surgeon at Fort Cœur d'Alène, Idaho. S. O. 83, Department of the Columbia, June 19, 1882.

BANISTER, J. M., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—When relieved by Assistant-Surgeon De Loffre, to proceed to camp of Ninth Cavalry, near cantonment on the Uncompahgre River, Col., and report to the Commanding Officer for duty. S. O. 124, Department of the Missouri, c. s.

Under the provisions of Section 1 of the Act of Congress, approved June 30, 1882, the following-named officers are by operation of law this day retired from active service, viz.:

BRIGADIER-GENERAL JOSEPH K. BARNES, Surgeon-General.
COLONEL JOHN M. CUYLER, Surgeon.
COLONEL WILLIAM S. KING, Surgeon.
LIEUTENANT-COLONEL JAMES SIMONS, Surgeon.

S. O. 151, A. G. O., June 30, 1882.

O'DONNOGHUE, F., CAPTAIN AND MEDICAL STOREKEEPER.—Died at New York City, June 29, 1882.